



AM

# SEQUENCE LISTING

<110> Gangolli et al.

<120> Polypeptides and Nucleic Acids Encoding Same

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<140> 10/029,020

<141> 2001-12-19

<150> 60/256,704

<151> 2000-12-19

<150> 60/311,590

<151> 2001-08-10

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<151> 2001-09-14

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<151> 2001-05-02

<160> 190

<170> PatentIn Ver. 2.1

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 <212> DNA  
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           35                  40                  45  
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 Pro Gln Glu Ala Glu Glu Phe Cys Arg Thr Gly Ala Asn Phe Thr Leu  
           65                  70                  75                  80  
 Arg Glu Leu Gly Leu Glu Glu Val Thr Pro Pro His Gly Thr Leu Tyr  
                   85                  90                  95  
 Arg Thr Asp Ile Gly Leu Pro Gln Cys Gly Tyr Ser Met Gly Ala Gly  
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 Ser Asp Ala Asp Met Glu Ala Asp Thr Val Leu Ser Pro Glu His Pro

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Asn	Thr	Glu	Thr	Asp	His	Pro	Gly	Gly	Leu	Gln	Asn	His	Ala	Arg	Leu
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Arg	Thr	Pro	Pro	Pro	Pro	Leu	Ser	His	Ala	His	Thr	Pro	Asn	Gln	His
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His	Ala	Ala	Ser	Ile	Asn	Ser	Leu	Asn	Arg	Gly	Asn	Phe	Thr	Pro	Arg
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Ala	Ser	Arg	His	Asp	Gly	Ala	Tyr	Ser	Asp	Gly	His	Phe	Leu	Phe	Lys
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Pro	Gly	Gly	Thr	Ser	Pro	Leu	Phe	Cys	Thr	Thr	Ser	Pro	Gly	Tyr	Pro
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Leu	Thr	Ser	Ser	Thr	Val	Tyr	Ser	Pro	Pro	Pro	Arg	Pro	Leu	Pro	Arg
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Ser	Thr	Phe	Ala	Arg	Pro	Ala	Phe	Asn	Leu	Lys	Lys	Pro	Ser	Lys	Tyr
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Cys	Asn	Trp	Lys	Cys	Ala	Ala	Leu	Ser	Ala	Ile	Val	Ile	Ser	Ala	Thr
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Leu	Val	Ile	Leu	Leu	Ala	Tyr	Phe	Val	Ala	Met	His	Leu	Phe	Gly	Leu
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Ser	Gly	Gly	Thr	Gly	Leu	Glu	Thr	Pro	Asp	Arg	Lys	Gly	Lys	Gly	Thr
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Thr	Pro	Arg	Gln	Ser	Arg	Gly	Thr	Val	Pro	Pro	Ser	Ser	His	Glu	Thr		
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Asn	Asp	Gly	Lys	Glu	Ser	Glu	Val	Val	Ser	Phe	Leu	Thr	Thr	Ala	Ile		
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Glu	Ser	Val	Asp	Asn	Cys	Pro	Ser	Asn	Cys	Tyr	Gly	Asn	Gly	Asp	Cys		
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Gly	Arg	Ala	Ser	Cys	Pro	Val	Leu	Cys	Ser	Gly	Asn	Gly	Gln	Tyr	Met		
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Val	Pro	Thr	Asn	Gln	Cys	Ile	Asp	Val	Ala	Cys	Ser	Asn	His	Gly	Thr		
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Cys	Ile	Thr	Gly	Thr	Cys	Ile	Cys	Asn	Pro	Gly	Tyr	Lys	Gly	Glu	Ser		
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Cys	Glu	Glu	Val	Asp	Cys	Met	Asp	Pro	Thr	Cys	Ser	Gly	Arg	Gly	Val		
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Cys	Val	Arg	Gly	Glu	Cys	His	Cys	Phe	Val	Gly	Trp	Gly	Gly	Thr	Asn		
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Cys	Glu	Thr	Pro	Arg	Ala	Thr	Cys	Leu	Asp	Gln	Cys	Ser	Gly	His	Gly		
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Thr	Phe	Leu	Pro	Asp	Thr	Gly	Leu	Cys	Ser	Cys	Asp	Pro	Ser	Trp	Thr		
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Gly	Val	Cys	Val	Gly	Gly	Thr	Cys	Arg	Cys	Glu	Asp	Gly	Trp	Met	Gly				
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His	Cys	Thr	Ile	Ala	His	Tyr	Leu	Asp	Arg	Val	Val	Lys	Glu	Gly	Cys				
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Leu	Val	Asp	Cys	Met	Asp	Pro	Asp	Cys	Cys	Leu	Gln	Pro	Leu	Cys	His				
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Ile	Asn	Pro	Leu	Cys	Leu	Gly	Ser	Pro	Asn	Pro	Leu	Asp	Ile	Ile	Gln				
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Cys Lys Met Arg Leu Ser Tyr Leu Ser Ser Arg Thr Pro Gly Tyr Lys			
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Ser Val Leu Arg Ile Ser Leu Thr His Pro Thr Ile Pro Phe Asn Leu			
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Met Lys Val His Leu Met Val Ala Val Glu Gly Arg Leu Phe Arg Lys			
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Trp Phe Ala Ala Ala Pro Asp Leu Ser Tyr Tyr Phe Ile Trp Asp Lys			
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Thr Asp Val Tyr Asn Gln Lys Val Phe Gly Leu Ser Glu Ala Phe Val			
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Ser Val Gly Tyr Glu Tyr Glu Ser Cys Pro Asp Leu Ile Leu Trp Glu			
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Lys Arg Thr Thr Val Leu Gln Gly Tyr Glu Ile Asp Ala Ser Lys Leu			
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Gly Gly Trp Ser Leu Asp Lys His His Ala Leu Asn Ile Gln Ser Gly			
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Ile Leu His Lys Gly Asn Gly Glu Asn Gln Phe Val Ser Gln Gln Pro			
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Pro Val Ile Gly Ser Ile Met Gly Asn Gly Arg Arg Arg Ser Ile Ser			
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Cys Pro Ser Cys Asn Gly Leu Ala Asp Gly Asn Lys Leu Leu Ala Pro			
	1220	1225	1230
Val Ala Leu Thr Cys Gly Ser Asp Gly Ser Leu Tyr Val Gly Asp Phe			
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Glu Leu Arg Asn Lys Asp Phe Arg His Ser His Ser Pro Ala His Lys			
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Tyr Tyr Leu Ala Thr Asp Pro Met Ser Gly Ala Val Phe Leu Ser Asp			
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Leu Pro Phe Asp Asp Thr Arg Cys Gly Asp Gly Gly Lys Ala Thr Glu			

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Pro Thr Asp Leu Ala Ile Asn Pro Met Asp Asn Ser Leu Tyr Val Leu 1410	1415	1420
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Leu Ala Val Ser His Asn Gly Val Leu Tyr Ile Ala Glu Thr Asp Glu 1475	1480	1485
Lys Lys Ile Asn Arg Ile Arg Gln Val Thr Thr Ser Gly Glu Ile Ser 1490	1495	1500
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Cys Asp Cys Phe Ser Gly Asp Asp Gly Tyr Ala Lys Asp Ala Lys Leu 1525	1530	1535
Asn Thr Pro Ser Ser Leu Ala Val Cys Ala Asp Gly Glu Leu Tyr Val 1540	1545	1550
Ala Asp Leu Gly Asn Ile Arg Ile Arg Phe Ile Arg Lys Asn Lys Pro 1555	1560	1565
Phe Leu Asn Thr Gln Asn Met Tyr Glu Leu Ser Ser Pro Ile Asp Gln 1570	1575	1580
Glu Leu Tyr Leu Phe Asp Thr Thr Gly Lys His Leu Tyr Thr Gln Ser 1585	1590	1595 1600
Leu Pro Thr Gly Asp Tyr Leu Tyr Asn Phe Thr Tyr Thr Gly Asp Gly 1605	1610	1615
Asp Ile Thr Leu Ile Thr Asp Asn Asn Gly Asn Met Val Asn Val Arg 1620	1625	1630
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Tyr Ile Gly Ala Asp Gly Ser Leu Arg Leu Leu Leu Ala Asn Gly Met 1765 1770 1775		
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Pro Thr Val Gly Lys Arg Asn Val Thr Leu Pro Ile Asp Asn Gly Leu 1795 1800 1805		
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Arg Lys Phe Thr Leu Arg Ile Leu Tyr Asp Gln Ala Gly Arg Pro Ser 1860 1865 1870		
Leu Trp Ser Pro Ser Ser Arg Leu Asn Gly Val Asn Val Thr Tyr Ser 1875 1880 1885		
Pro Gly Gly Tyr Ile Ala Gly Ile Gln Arg Gly Ile Met Ser Glu Arg 1890 1895 1900		
Met Glu Tyr Asp Gln Ala Gly Arg Ile Thr Ser Arg Ile Phe Ala Asp 1905 1910 1915 1920		
Gly Lys Thr Trp Ser Tyr Thr Tyr Leu Glu Lys Ser Met Val Leu Leu 1925 1930 1935		
Leu His Ser Gln Arg Gln Tyr Ile Phe Glu Phe Asp Lys Asn Asp Arg		

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Leu	Ser	Ser	Val	Thr	Met	Pro	Asn	Val	Ala	Arg	Gln	Thr	Leu	Glu	Thr	
1955					1960					1965						
Ile	Arg	Ser	Val	Gly	Tyr	Tyr	Arg	Asn	Ile	Tyr	Gln	Pro	Pro	Glu	Gly	
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Thr	Phe	Tyr	Leu	Gly	Thr	Gly	Arg	Arg	Val	Ile	Tyr	Lys	Tyr	Gly	Lys	
2005					2010					2015						
Leu	Ser	Lys	Leu	Ala	Glu	Thr	Leu	Tyr	Asp	Thr	Thr	Lys	Val	Ser	Phe	
2020					2025					2030						
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Phe	Asp	Tyr	Asn	Tyr	Asp	Asn	Ser	Phe	Arg	Val	Thr	Ser	Met	Gln	Ala	
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Val Arg Tyr Arg Tyr Asp Gly Leu Gly Arg Arg Val Ser Ser Lys Ser 2290 2295 2300		
Ser His Ser His His Leu Gln Phe Phe Tyr Ala Asp Leu Thr Asn Pro 2305 2310 2315 2320		
Thr Lys Val Thr His Leu Tyr Asn His Ser Ser Ser Glu Ile Thr Ser 2325 2330 2335		
Leu Tyr Tyr Asp Leu Gln Gly His Leu Phe Ala Met Glu Leu Ser Ser 2340 2345 2350		
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Val Phe Ser Gly Thr Gly Leu Met Ile Lys Gln Ile Leu Tyr Thr Ala 2370 2375 2380		
Tyr Gly Glu Ile Tyr Met Asp Thr Asn Pro Asn Phe Gln Ile Ile Ile 2385 2390 2395 2400		
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Gly Arg Arg Asp Tyr Asp Val Leu Ala Gly Arg Trp Thr Ser Pro Asp 2420 2425 2430		
His Glu Leu Trp Lys His Leu Ser Ser Ser Asn Val Met Pro Phe Asn 2435 2440 2445		
Leu Tyr Met Phe Lys Asn Asn Asn Pro Ile Ser Asn Ser Gln Asp Ile 2450 2455 2460		
Lys Cys Phe Met Thr Asp Val Asn Ser Trp Leu Leu Thr Phe Gly Phe 2465 2470 2475 2480		
Gln Leu His Asn Val Ile Pro Gly Tyr Pro Lys Pro Asp Met Asp Ala 2485 2490 2495		
Met Glu Pro Ser Tyr Glu Leu Ile His Thr Gln Met Lys Thr Gln Glu 2500 2505 2510		
Trp Asp Asn Ser Lys Ser Ile Leu Gly Val Gln Cys Glu Val Gln Lys 2515 2520 2525		
Gln Leu Lys Ala Phe Val Thr Leu Glu Arg Phe Asp Gln Leu Tyr Gly 2530 2535 2540		
Ser Thr Ile Thr Ser Cys Gln Gln Ala Pro Lys Thr Lys Lys Phe Ala		

2545	2550	2555	2560
Ser Ser Gly Ser Val Phe Gly Lys Gly Val Lys Phe Ala Leu Lys Asp	2565	2570	2575
Gly Arg Val Thr Thr Asp Ile Ile Ser Val Ala Asn Glu Asp Gly Arg	2580	2585	2590
Arg Val Ala Ala Ile Leu Asn His Ala His Tyr Leu Glu Asn Leu His	2595	2600	2605
Phe Thr Ile Asp Gly Val Asp Thr His Tyr Phe Val Lys Pro Gly Pro	2610	2615	2620
Ser Glu Gly Asp Leu Ala Ile Leu Gly Leu Ser Gly Gly Arg Arg Thr	2625	2630	2635
Leu Glu Asn Gly Val Asn Val Thr Val Ser Gln Ile Asn Thr Val Leu	2645	2650	2655
Asn Gly Arg Thr Arg Arg Tyr Thr Asp Ile Gln Leu Gln Tyr Gly Ala	2660	2665	2670
Leu Cys Leu Asn Thr Arg Tyr Gly Thr Thr Leu Asp Glu Glu Lys Ala	2675	2680	2685
Arg Val Leu Glu Leu Ala Arg Gln Arg Ala Val Arg Gln Ala Trp Ala	2690	2695	2700
Arg Glu Gln Gln Arg Leu Arg Glu Gly Glu Glu Gly Leu Arg Ala Trp	2705	2710	2715
Thr Glu Gly Glu Lys Gln Gln Val Leu Ser Thr Gly Arg Val Gln Gly	2725	2730	2735
Tyr Asp Gly Phe Phe Val Ile Ser Val Glu Gln Tyr Pro Glu Leu Ser	2740	2745	2750
Asp Ser Ala Asn Asn Ile His Phe Met Arg Gln Ser Glu Met Gly Arg	2755	2760	2765

Arg

<210> 15

<211> 822

<212> DNA

<213> Homo sapiens

<400> 15

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gtcttccggg	ccctgatac	gggggagctg	gagaaggggc	agagtcagtt	ccaggccctc	300
tgctttgtca	cccagctgca	gcacaatgag	atcatcccca	gtgaggccat	ggccaagctc	360

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gtgtgtgccg aggcctgga tgccatctac acccgccagg aggatgtccg gttctggctg 540
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tacaagtgtg gcatccgcag ctgccagaag agctacagct ttgacttcta cgtgccccag 780
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<210> 16
<211> 273
<212> PRT
<213> Homo sapiens

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      20             25             30

Arg Val Arg Val Arg Leu Pro Asp Gly Gln Val Thr Glu Glu Ser Leu
      35             40             45

Gln Ala Asp Ser Asp Ala Asp Ser Ile Ser Leu Glu Leu Arg Lys Pro
      50             55             60

Asp Gly Thr Leu Val Ser Phe Thr Ala Asp Phe Lys Lys Asp Val Lys
      65             70             75             80

Val Phe Arg Ala Leu Ile Leu Gly Glu Leu Glu Lys Gly Gln Ser Gln
      85             90             95

Phe Gln Ala Leu Cys Phe Val Thr Gln Leu Gln His Asn Glu Ile Ile
      100            105            110

Pro Ser Glu Ala Met Ala Lys Leu Arg Gln Lys Asn Pro Arg Ala Val
      115            120            125

Arg Gln Ala Glu Glu Val Arg Gly Leu Glu His Leu His Met Asp Val
      130            135            140

Ala Val Asn Phe Ser Gln Gly Ala Leu Leu Ser Pro His Leu His Asn
      145            150            155            160

Val Cys Ala Glu Ala Val Asp Ala Ile Tyr Thr Arg Gln Glu Asp Val
      165            170            175

Arg Phe Trp Leu Glu Gln Gly Val Asp Ser Ser Val Phe Glu Ala Leu
      180            185            190

Pro Lys Ala Ser Glu Gln Ala Glu Leu Pro Arg Cys Arg Gln Val Gly
      195            200            205

Asp Arg Gly Lys Pro Cys Val Cys His Tyr Gly Leu Ser Leu Ala Trp
      210            215            220

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Tyr Pro Cys Met Leu Lys Tyr Cys His Ser Arg Asp Arg Pro Thr Pro  
 225 230 235 240

Tyr Lys Cys Gly Ile Arg Ser Cys Gln Lys Ser Tyr Ser Phe Asp Phe  
 245 250 255

Tyr Val Pro Gln Arg Gln Leu Cys Leu Trp Asp Glu Asp Pro Tyr Pro  
 260 265 270

Gly

<210> 17  
 <211> 1362  
 <212> DNA  
 <213> Homo sapiens

<400> 17  
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 ggccaggtga ccgaggagag cctgcaggcg gacagcgacg cggacagcat cagcctcgag 180  
 ctgcgcaagc ccgacggcac cctcgtctcc ttcaccgccc acttcaagaa ggatgtgaag 240  
 gtcttcgggg ccctgatacct gggggagctg gagaaggggc agagtcagtt ccaggccctc 300  
 tgctttgtca cccagctgca gcacaatgag atcatcccca gtgaggccat ggccaagctc 360  
 cggcagaaaa atccccgggc agtgcggcag gcggaggagg ctcgggggtct ggagcatctg 420  
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<210> 18  
 <211> 273  
 <212> PRT  
 <213> Homo sapiens

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Arg Val Arg Val Arg Leu Pro Asp Gly Gln Val Thr Glu Glu Ser Leu  
           35                          40                          45  
 Gln Ala Asp Ser Asp Ala Asp Ser Ile Ser Leu Glu Leu Arg Lys Pro  
           50                          55                          60  
 Asp Gly Thr Leu Val Ser Phe Thr Ala Asp Phe Lys Lys Asp Val Lys  
           65                          70                          75                          80  
 Val Phe Arg Ala Leu Ile Leu Gly Glu Leu Glu Lys Gly Gln Ser Gln  
                           85                          90                          95  
 Phe Gln Ala Leu Cys Phe Val Thr Gln Leu Gln His Asn Glu Ile Ile  
                           100                          105                          110  
 Pro Ser Glu Ala Met Ala Lys Leu Arg Gln Lys Asn Pro Arg Ala Val  
           115                          120                          125  
 Arg Gln Ala Glu Glu Ala Arg Gly Leu Glu His Leu His Met Asp Val  
           130                          135                          140  
 Ala Val Asn Cys Ser Gln Gly Ala Leu Leu Ser Pro His Leu His Asn  
           145                          150                          155                          160  
 Val Cys Ala Glu Ala Val Asp Ala Ile Tyr Thr Arg Gln Glu Asp Val  
                           165                          170                          175  
 Arg Phe Trp Leu Glu Gln Gly Val Asp Ser Ser Val Phe Glu Ala Leu  
           180                          185                          190  
 Pro Lys Ala Ser Glu Gln Ala Glu Leu Pro Arg Cys Arg Gln Val Gly  
           195                          200                          205  
 Asp Arg Gly Lys Pro Cys Val Cys His Tyr Gly Leu Ser Leu Ala Trp  
           210                          215                          220  
 Tyr Pro Cys Met Leu Lys Tyr Cys His Ser Arg Asp Arg Pro Thr Pro  
           225                          230                          235                          240  
 Tyr Lys Cys Gly Ile Arg Ser Cys Gln Lys Ser Tyr Ser Phe Asp Phe  
                           245                          250                          255  
 Tyr Val Pro Gln Arg Gln Leu Cys Leu Trp Asp Glu Asp Pro Tyr Pro  
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Gly

<210> 19  
 <211> 3641  
 <212> DNA  
 <213> Homo sapiens

<400> 19  
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ccttgctctc tctcttttta ataaatttaa taaaacttta a 3641

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<210> 20
<211> 1035
<212> PRT
<213> Homo sapiens

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<400> 20
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Leu Pro Leu Leu Thr Ala Trp Thr Gly Asp Cys Ser His Val Ser Asn
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Gln Val Val Leu Leu Asp Thr Ser Thr Val Met Gly Glu Leu Gly Trp
      35              40              45

Lys Thr Tyr Pro Leu Asn Gly Trp Asp Ala Ile Thr Glu Met Asp Glu
      50              55              60

His Asn Arg Pro Ile His Thr Tyr Gln Val Cys Asn Val Met Glu Pro
      65              70              75              80

Asn Gln Asn Asn Trp Leu Arg Thr Asn Trp Ile Ser Arg Asp Ala Ala
      85              90              95

Gln Lys Ile Tyr Val Glu Met Lys Phe Thr Leu Arg Asp Cys Asn Ser
      100             105             110

Ile Pro Trp Val Leu Gly Thr Cys Lys Glu Thr Phe Thr Leu Tyr Tyr
      115             120             125

Ile Glu Ser Asp Glu Ser His Gly Thr Lys Phe Lys Pro Ser Gln Tyr
      130             135             140

Ile Lys Ile Asp Thr Ile Ala Ala Asp Glu Ser Phe Thr Gln Met Asp
      145             150             155             160

Leu Gly Asp Arg Ile Leu Lys Leu Asn Thr Glu Ile Arg Glu Val Gly
      165             170             175

Pro Ile Glu Arg Lys Gly Phe Tyr Leu Ala Phe Gln Asp Ile Gly Ala
      180             185             190

Cys Ile Ala Leu Val Ser Val Arg Val Phe Tyr Lys Lys Cys Pro Phe
      195             200             205

Thr Val Arg Asn Leu Ala Met Phe Pro Asp Thr Ile Pro Arg Val Asp
      210             215             220

Ser Ser Ser Leu Val Glu Val Arg Gly Ser Cys Val Lys Ser Ala Glu
      225             230             235             240

Glu Arg Asp Thr Pro Lys Leu Tyr Cys Gly Ala Asp Gly Asp Trp Leu
      245             250             255

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Val Pro Leu Gly Arg Cys Ile Cys Ser Thr Gly Tyr Glu Glu Ile Glu  
 260 265 270  
 Gly Ser Cys His Ala Cys Arg Pro Gly Phe Tyr Lys Ala Phe Ala Gly  
 275 280 285  
 Asn Thr Lys Cys Ser Lys Cys Pro Pro His Ser Leu Thr Tyr Met Glu  
 290 295 300  
 Ala Thr Ser Val Cys Gln Cys Glu Lys Gly Tyr Phe Arg Ala Glu Lys  
 305 310 315 320  
 Asp Pro Pro Ser Met Ala Cys Thr Arg Pro Pro Ser Ala Pro Arg Asn  
 325 330 335  
 Val Val Phe Asn Ile Asn Glu Thr Ala Leu Ile Leu Glu Trp Ser Pro  
 340 345 350  
 Pro Ser Asp Thr Gly Gly Arg Lys Asp Leu Thr Tyr Ser Val Ile Cys  
 355 360 365  
 Lys Lys Cys Gly Leu Asp Thr Ser Gln Cys Glu Asp Cys Gly Gly Gly  
 370 375 380  
 Leu Arg Phe Ile Pro Arg His Thr Gly Leu Ile Asn Asn Ser Val Ile  
 385 390 395 400  
 Val Leu Asp Phe Val Ser His Val Asn Tyr Thr Phe Glu Ile Glu Ala  
 405 410 415  
 Met Asn Gly Val Ser Glu Leu Ser Phe Ser Pro Lys Pro Phe Thr Ala  
 420 425 430  
 Ile Thr Val Thr Thr Asp Gln Asp Ala Pro Ser Leu Ile Gly Val Val  
 435 440 445  
 Arg Lys Asp Trp Ala Ser Gln Asn Ser Ile Ala Leu Ser Trp Gln Ala  
 450 455 460  
 Pro Ala Phe Ser Asn Gly Ala Ile Leu Asp Tyr Glu Ile Lys Tyr Tyr  
 465 470 475 480  
 Glu Lys Glu His Glu Gln Leu Thr Tyr Ser Ser Thr Arg Ser Lys Ala  
 485 490 495  
 Pro Ser Val Ile Ile Thr Gly Leu Lys Pro Ala Thr Lys Tyr Val Phe  
 500 505 510  
 His Ile Arg Val Arg Thr Ala Thr Gly Tyr Ser Gly Tyr Ser Gln Lys  
 515 520 525  
 Phe Glu Phe Glu Thr Gly Asp Glu Thr Ser Asp Met Ala Ala Glu Gln  
 530 535 540  
 Gly Gln Ile Leu Val Ile Ala Thr Ala Val Gly Gly Phe Thr Leu  
 545 550 555 560



Leu Val Ile Leu Thr Leu Phe Phe Leu Ile Thr Gly Arg Cys Gln Trp  
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 Tyr Ile Lys Ala Lys Met Lys Ser Glu Glu Lys Arg Arg Asn His Leu  
 580 585 590  
 Gln Asn Gly His Leu Arg Phe Pro Gly Ile Lys Thr Tyr Ile Asp Pro  
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 Asp Thr Tyr Glu Asp Pro Ser Leu Ala Val His Glu Phe Ala Lys Glu  
 610 615 620  
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 Phe Gly Glu Val Cys Ser Gly Arg Leu Lys Thr Pro Gly Lys Arg Glu  
 645 650 655  
 Ile Pro Val Ala Ile Lys Thr Leu Lys Gly Gly His Met Asp Arg Gln  
 660 665 670  
 Arg Arg Asp Phe Leu Arg Glu Ala Ser Ile Met Gly Gln Phe Asp His  
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 Pro Asn Ile Ile Arg Leu Glu Gly Val Val Thr Lys Arg Ser Phe Pro  
 690 695 700  
 Ala Ile Gly Val Glu Ala Phe Cys Pro Ser Phe Leu Arg Ala Gly Phe  
 705 710 715 720  
 Leu Asn Ser Ile Gln Ala Pro His Pro Val Pro Gly Gly Gly Ser Leu  
 725 730 735  
 Pro Pro Arg Ile Pro Ala Gly Arg Pro Val Met Ile Val Val Glu Tyr  
 740 745 750  
 Met Glu Asn Gly Ser Leu Asp Ser Phe Leu Arg Lys His Asp Gly His  
 755 760 765  
 Phe Thr Val Ile Gln Leu Val Gly Met Leu Arg Gly Ile Ala Ser Gly  
 770 775 780  
 Met Lys Tyr Leu Ser Asp Met Gly Tyr Val His Arg Asp Leu Ala Ala  
 785 790 795 800  
 Arg Asn Ile Leu Val Asn Ser Asn Leu Val Cys Lys Val Ser Asp Phe  
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 Gly Leu Ser Arg Val Leu Glu Asp Asp Pro Glu Ala Ala Tyr Thr Thr  
 820 825 830  
 Thr Gly Gly Lys Ile Pro Ile Arg Trp Thr Ala Pro Glu Ala Ile Ala  
 835 840 845  
 Tyr Arg Lys Phe Ser Ser Ala Ser Asp Ala Trp Ser Tyr Gly Ile Val  
 850 855 860

Met Trp Glu Val Met Ser Tyr Gly Glu Arg Pro Tyr Trp Glu Met Ser  
865 870 875 880

Asn Gln Asp Val Ile Leu Ser Ile Glu Glu Gly Tyr Arg Leu Pro Ala  
885 890 895

Pro Met Gly Cys Pro Ala Ser Leu His Gln Leu Met Leu His Cys Trp  
900 905 910

Gln Lys Glu Arg Asn His Arg Pro Lys Phe Thr Asp Ile Val Ser Phe  
915 920 925

Leu Asp Lys Leu Ile Arg Asn Pro Ser Ala Leu His Thr Leu Val Glu  
930 935 940

Asp Ile Leu Val Met Pro Glu Ser Pro Gly Glu Val Pro Glu Tyr Pro  
945 950 955 960

Leu Phe Val Thr Val Gly Asp Trp Leu Asp Ser Ile Lys Met Gly Gln  
965 970 975

Tyr Lys Asn Asn Phe Val Ala Ala Gly Phe Thr Thr Phe Asp Leu Ile  
980 985 990

Ser Arg Met Ser Ile Asp Asp Ile Arg Arg Ile Gly Val Ile Leu Ile  
995 1000 1005

Gly His Gln Arg Arg Ile Val Ser Ser Ile Gln Thr Leu Arg Leu His  
1010 1015 1020

Met Met His Ile Gln Glu Lys Gly Phe His Val  
1025 1030 1035

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<211> 3692  
<212> DNA  
<213> Homo sapiens

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gttgtgttgc ttgatacaac aactgtactg ggagagctag gatggaaaac atatccatta 180  
aatgggtggg atgccatcac tgaaatggat gaacataata ggccattca cacataccag 240  
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 595 600 605  
 Leu Gln Asn Gly His Leu Arg Phe Pro Gly Ile Lys Thr Tyr Ile Asp  
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 Pro Leu Phe Val Thr Val Gly Asp Trp Leu Asp Ser Ile Lys Met Gly  
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1607

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ctgtgatatt	gaccgaaggc	tacatacaga	tctgtgaatc	ttggctggga	cttcctctga	2880
gtgatgcctg	agggtcagct	cctctagaca	ttgactgcaa	gagaatctct	gcaacctcct	2940
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ggcttaagtt	tgggctagag	tttgacttta	tgaaggaggt	cattgaaaaa	gagaacagtg	3060
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ctaatagaaa	aatatactag	cctggccatg	ccaataagtt	tcctgctgtg	tctgttaggc	3180
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<210> 26  
 <211> 747  
 <212> PRT  
 <213> Homo sapiens

<400> 26

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Met Gly Arg Gly Pro Trp Asp Ala Gly Pro Ser Arg Arg Leu Leu Pro
 1           5           10           15

Leu Leu Leu Leu Leu Gly Leu Ala Arg Gly Ala Ala Gly Ala Pro Gly
 20           25           30

Pro Asp Gly Leu Asp Val Cys Ala Thr Cys His Glu His Ala Thr Cys
 35           40           45

Gln Gln Arg Glu Gly Lys Lys Ile Cys Ile Cys Asn Tyr Gly Phe Val
 50           55           60

Gly Asn Gly Arg Thr Gln Cys Val Asp Lys Asn Glu Cys Gln Phe Gly
 65           70           75           80

Ala Thr Leu Val Cys Gly Asn His Thr Ser Cys His Asn Thr Pro Gly
 85           90           95

Gly Phe Tyr Cys Ile Cys Leu Glu Gly Tyr Arg Ala Thr Asn Asn Asn
100           105           110

Lys Thr Phe Ile Pro Asn Asp Gly Thr Phe Cys Thr Asp Ile Asp Glu
115           120           125

Cys Glu Val Ser Gly Leu Cys Arg His Gly Gly Arg Cys Val Asn Thr
130           135           140

His Gly Ser Phe Glu Cys Tyr Cys Met Asp Gly Tyr Leu Pro Arg Asn
145           150           155           160

Gly Pro Glu Pro Phe His Pro Thr Thr Asp Ala Thr Ser Cys Thr Glu
165           170           175

Ile Asp Cys Gly Thr Pro Pro Glu Val Pro Asp Gly Tyr Ile Ile Gly
180           185           190

Asn Tyr Thr Ser Ser Leu Gly Ser Gln Val Arg Tyr Ala Cys Arg Glu
195           200           205

Gly Phe Phe Ser Val Pro Glu Asp Thr Val Ser Ser Cys Thr Gly Leu
210           215           220

Gly Thr Trp Glu Ser Pro Lys Leu His Cys Gln Glu Ile Asn Cys Gly
225           230           235           240

Asn Pro Pro Glu Met Arg His Ala Ile Leu Val Gly Asn His Ser Ser
245           250           255

Arg Leu Gly Gly Val Ala Arg Tyr Val Cys Gln Glu Gly Phe Glu Ser
260           265           270

Pro Gly Gly Lys Ile Thr Ser Val Cys Thr Glu Lys Gly Thr Trp Arg
275           280           285

Glu Ser Thr Leu Thr Cys Thr Glu Ile Leu Thr Lys Ile Asn Asp Val
290           295           300

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Ser Leu Phe Asn Asp Thr Cys Val Arg Trp Gln Ile Asn Ser Arg Arg  
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 325 330 335  
 Asp Pro Met Glu Ser Val Arg Glu Glu Thr Val Asn Leu Thr Thr Asp  
 340 345 350  
 Ser Arg Thr Pro Glu Val Cys Leu Ala Leu Tyr Pro Gly Thr Asn Tyr  
 355 360 365  
 Thr Val Asn Ile Ser Thr Ala Pro Pro Arg Arg Ser Met Pro Ala Val  
 370 375 380  
 Ile Gly Phe Gln Thr Ala Glu Val Asp Leu Leu Glu Asp Asp Gly Ser  
 385 390 395 400  
 Phe Asn Ile Ser Ile Phe Asn Glu Thr Cys Leu Lys Leu Asn Arg Arg  
 405 410 415  
 Ser Arg Lys Val Gly Ser Glu His Met Tyr Gln Phe Thr Val Leu Gly  
 420 425 430  
 Gln Arg Trp Tyr Leu Ala Asn Phe Ser His Ala Thr Ser Phe Asn Phe  
 435 440 445  
 Thr Thr Arg Glu Gln Val Pro Val Val Cys Leu Asp Leu Tyr Pro Thr  
 450 455 460  
 Thr Asp Tyr Thr Val Asn Val Thr Leu Leu Arg Ser Pro Lys Arg His  
 465 470 475 480  
 Ser Val Gln Ile Thr Ile Ala Thr Pro Pro Ala Val Lys Gln Thr Ile  
 485 490 495  
 Ser Asn Ile Ser Gly Phe Asn Glu Thr Cys Leu Arg Trp Arg Ser Ile  
 500 505 510  
 Lys Thr Ala Asp Met Glu Glu Met Tyr Leu Phe His Ile Trp Gly Gln  
 515 520 525  
 Arg Trp Tyr Gln Lys Glu Phe Ala Gln Glu Met Thr Phe Asn Ile Ser  
 530 535 540  
 Ser Ser Ser Arg Asp Pro Glu Val Cys Leu Asp Leu Arg Pro Gly Thr  
 545 550 555 560  
 Asn Tyr Asn Val Ser Leu Arg Ala Leu Ser Ser Glu Leu Pro Val Val  
 565 570 575  
 Ile Ser Leu Thr Thr Gln Ile Thr Glu Pro Pro Leu Pro Glu Val Glu  
 580 585 590  
 Phe Phe Thr Val His Arg Gly Pro Leu Pro Arg Leu Arg Leu Arg Lys  
 595 600 605

Ala Lys Glu Lys Asn Gly Pro Ile Ser Ser Tyr Gln Val Leu Val Leu  
 610 615 620  
 Pro Leu Ala Leu Gln Ser Thr Phe Ser Cys Asp Ser Glu Gly Ala Ser  
 625 630 635 640  
 Ser Phe Phe Ser Asn Ala Ser Asp Ala Asp Gly Tyr Val Ala Ala Glu  
 645 650 655  
 Leu Leu Ala Lys Asp Val Pro Asp Asp Ala Met Glu Ile Pro Ile Gly  
 660 665 670  
 Asp Arg Leu Tyr Tyr Gly Glu Tyr Tyr Asn Ala Pro Leu Lys Arg Gly  
 675 680 685  
 Ser Asp Tyr Cys Ile Ile Leu Arg Ile Thr Ser Glu Trp Asn Lys Val  
 690 695 700  
 Arg Arg His Ser Cys Ala Val Trp Ala Gln Val Lys Asp Ser Ser Leu  
 705 710 715 720  
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 740 745

<210> 27  
 <211> 2507  
 <212> DNA  
 <213> Homo sapiens

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 cccaggcccc gacaggagga aggacccgcg ctctgcgggc tcccggggac cccgcagcgc 180  
 cccccgcttc cctcggcggc gccggaagcc gccggctggt cccctccccg cggcgcctgt 240  
 agccttatct ctgcaccctg agggccccgg gaggaggcgc gggcgcgccg ggagggaccg 300  
 gcggcggcat gggccggggg ccctgggatg cgggcccgtc tcgccgcctg ctgccgctgt 360  
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 tttgcaacta tggatttgta gggaacggga ggactcagtg tgttgataaa aatgagtgcc 540  
 agtttgagc cactcttgct tgtgggaacc acacatcttg ccacaacacc cccgggggct 600  
 tctattgcat ttgcctggaa ggatatcgag ccacaaacaa caacaagaca ttcatcccca 660  
 acgatggcac cttttgtaca gacatagatg agtgtagaag ttctggcctg tgcaggcatg 720  
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 caaggaatgg acctgaacct ttccaccgca ccaccgatgc cacatcatgc acagaaatag 840  
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 tgacaaagat taatgatgta tcaactgtta atgatacctg tgtgagatgg caaataaact 1260  
 caagaagaat aaaccccaag atctcatatg tgatatccat aaaaggacaa cggttggacc 1320

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ctatggaatc agttcgtgag gagacagtca acttgaccac agacagcagg accccagaag 1380
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atggaagttt caatatttca atatttaatg aaacttgttt gaaattgaac aggcgttcta 1560
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tggcggtgtg tggactgggt tccctggctg ttgtgatcat tctcacattc ctctccttct 2460
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<210> 28  
 <211> 720  
 <212> PRT  
 <213> Homo sapiens

<400> 28  
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 Leu Leu Leu Leu Leu Gly Leu Ala Arg Gly Ala Ala Gly Ala Pro Gly  
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 Pro Asp Gly Leu Asp Val Cys Ala Thr Cys His Glu His Ala Thr Cys  
 35 40 45  
 Gln Gln Arg Glu Gly Lys Lys Ile Cys Ile Cys Asn Tyr Gly Phe Val  
 50 55 60  
 Gly Asn Gly Arg Thr Gln Cys Val Asp Lys Asn Glu Cys Gln Phe Gly  
 65 70 75 80  
 Ala Thr Leu Val Cys Gly Asn His Thr Ser Cys His Asn Thr Pro Gly  
 85 90 95  
 Gly Phe Tyr Cys Ile Cys Leu Glu Gly Tyr Arg Ala Thr Asn Asn Asn  
 100 105 110  
 Lys Thr Phe Ile Pro Asn Asp Gly Thr Phe Cys Thr Asp Ile Asp Glu  
 115 120 125  
 Cys Glu Val Ser Gly Leu Cys Arg His Gly Gly Arg Cys Val Asn Thr  
 130 135 140  
 His Gly Ser Phe Glu Cys Tyr Cys Met Asp Gly Tyr Leu Pro Arg Asn  
 145 150 155 160

Gly Pro Glu Pro Phe His Pro Thr Thr Asp Ala Thr Ser Cys Thr Glu  
 165 170 175  
 Ile Asp Cys Gly Thr Pro Pro Glu Val Pro Asp Gly Tyr Ile Ile Gly  
 180 185 190  
 Asn Tyr Thr Ser Ser Leu Gly Ser Gln Val Arg Tyr Ala Cys Arg Glu  
 195 200 205  
 Gly Phe Phe Ser Val Pro Glu Asp Thr Val Ser Ser Cys Thr Gly Leu  
 210 215 220  
 Gly Thr Trp Glu Ser Pro Lys Leu His Cys Gln Glu Ile Asn Cys Gly  
 225 230 235 240  
 Asn Pro Pro Glu Met Arg His Ala Ile Leu Val Gly Asn His Ser Ser  
 245 250 255  
 Arg Leu Gly Gly Val Ala Arg Tyr Val Cys Gln Glu Gly Phe Glu Ser  
 260 265 270  
 Pro Gly Gly Lys Ile Thr Ser Val Cys Thr Glu Lys Gly Thr Trp Arg  
 275 280 285  
 Glu Ser Thr Leu Thr Cys Thr Glu Ile Leu Thr Lys Ile Asn Asp Val  
 290 295 300  
 Ser Leu Phe Asn Asp Thr Cys Val Arg Trp Gln Ile Asn Ser Arg Arg  
 305 310 315 320  
 Ile Asn Pro Lys Ile Ser Tyr Val Ile Ser Ile Lys Gly Gln Arg Leu  
 325 330 335  
 Asp Pro Met Glu Ser Val Arg Glu Glu Thr Val Asn Leu Thr Thr Asp  
 340 345 350  
 Ser Arg Thr Pro Glu Val Cys Leu Ala Leu Tyr Pro Gly Thr Asn Tyr  
 355 360 365  
 Thr Val Asn Ile Ser Thr Ala Pro Pro Arg Arg Ser Met Pro Ala Val  
 370 375 380  
 Ile Gly Phe Gln Thr Ala Glu Val Asp Leu Leu Glu Asp Asp Gly Ser  
 385 390 395 400  
 Phe Asn Ile Ser Ile Phe Asn Glu Thr Cys Leu Lys Leu Asn Arg Arg  
 405 410 415  
 Ser Arg Lys Val Gly Ser Glu His Met Tyr Gln Phe Thr Val Leu Gly  
 420 425 430  
 Gln Arg Trp Tyr Leu Ala Asn Phe Ser His Ala Thr Ser Phe Asn Phe  
 435 440 445  
 Thr Thr Arg Glu Gln Val Pro Val Val Cys Leu Asp Leu Tyr Pro Thr  
 450 455 460

Thr	Asp	Tyr	Thr	Val	Asn	Val	Thr	Leu	Leu	Arg	Ser	Pro	Lys	Arg	His	465	470	475				480
Ser	Val	Gln	Ile	Thr	Ile	Ala	Thr	Pro	Pro	Ala	Val	Lys	Gln	Thr	Ile		485	490				495
Ser	Asn	Ile	Ser	Gly	Phe	Asn	Glu	Thr	Cys	Leu	Arg	Trp	Arg	Ser	Ile		500	505				510
Lys	Thr	Ala	Asp	Met	Glu	Glu	Met	Tyr	Leu	Phe	His	Ile	Trp	Gly	Gln		515	520				525
Arg	Trp	Tyr	Gln	Lys	Glu	Phe	Ala	Gln	Glu	Met	Thr	Phe	Asn	Ile	Ser		530	535				540
Ser	Ser	Ser	Arg	Asp	Pro	Glu	Val	Cys	Leu	Asp	Leu	Arg	Pro	Gly	Thr		545	550				555
Asn	Tyr	Asn	Val	Ser	Leu	Arg	Ala	Leu	Ser	Ser	Glu	Leu	Pro	Val	Val		565	570				575
Ile	Ser	Leu	Thr	Thr	Gln	Ile	Thr	Glu	Pro	Pro	Leu	Pro	Glu	Val	Glu		580	585				590
Phe	Phe	Thr	Val	His	Arg	Gly	Pro	Leu	Pro	Arg	Leu	Arg	Leu	Arg	Lys		595	600				605
Ala	Lys	Glu	Lys	Asn	Gly	Pro	Ile	Ser	Asn	Ala	Ser	Asp	Ala	Asp	Gly		610	615				620
Tyr	Val	Ala	Ala	Glu	Leu	Leu	Ala	Lys	Asp	Val	Pro	Asp	Asp	Ala	Met		625	630				635
Glu	Ile	Pro	Ile	Gly	Asp	Arg	Leu	Tyr	Tyr	Gly	Glu	Tyr	Tyr	Asn	Ala		645	650				655
Pro	Leu	Lys	Arg	Gly	Ser	Asp	Tyr	Cys	Ile	Ile	Leu	Arg	Ile	Thr	Ser		660	665				670
Glu	Trp	Asn	Lys	Val	Arg	Arg	His	Ser	Cys	Ala	Val	Trp	Ala	Gln	Val		675	680				685
Lys	Asp	Ser	Ser	Leu	Met	Leu	Leu	Gln	Met	Ala	Gly	Val	Gly	Leu	Gly		690	695				700
Ser	Leu	Ala	Val	Val	Ile	Ile	Leu	Thr	Phe	Leu	Ser	Phe	Ser	Ala	Val		705	710				715
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<210> 29  
 <211> 861  
 <212> DNA  
 <213> Homo sapiens



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<400> 29
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cccagcaatg tgaccctgga atgcaacttt gacactggta gtcattgtgaa ccttggagca 180
ataacagtca gtttgcaaaa ggtggaaaat gatacatccc cacaccgtga aagagccact 240
ttgctggagg agcagctgcc cctaggggaag gcctcggtcc acatacctca agtccaagtg 300
agggacgaag gacagtacca atgcataatc atctatgggg tcgcctggga ctacaagtac 360
ctgactctga aagtcaaagg tgcttcctac aggaaaataa acaactcacat cctaaagggtt 420
ccagaaacag atgaggtaga gctcacctgc caggctacag gttatcctct ggcagaagta 480
tcctggccaa acgtcagcgt tcctgccaac accagccact ccaggacccc tgaaggcctc 540
taccaggtca ccagtgttct gcgcctaaag ccaccccctg gcagaaactt cagctgtgtg 600
ttctggaata ctcacgtgag ggaacttact ttggccagca ttgaccttca aagtaagatg 660
gaaccagga cccatccaac ttggctgctt cacattttca tccccttctg catcattgct 720
ttcattttca tagccacagt gatagcccta agaaaacaac tctgtcaaaa gctgtattct 780
tcaaaaggta agtgagtttt attcatggta acccaatgca ctgggtgtct gcagcatgag 840
ccactgcttt gcactgcagg c 861

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<210> 30
<211> 249
<212> PRT
<213> Homo sapiens

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<400> 30
Met Thr Lys Tyr Leu Val Phe Phe Ser Ala Leu Phe Thr Val Thr Val
  1             5             10             15

Pro Lys His Leu Tyr Ile Ile Lys His Pro Ser Asn Val Thr Leu Glu
      20             25             30

Cys Asn Phe Asp Thr Gly Ser His Val Asn Leu Gly Ala Ile Thr Val
      35             40             45

Ser Leu Gln Lys Val Glu Asn Asp Thr Ser Pro His Arg Glu Arg Ala
      50             55             60

Thr Leu Leu Glu Glu Gln Leu Pro Leu Gly Lys Ala Ser Phe His Ile
      65             70             75             80

Pro Gln Val Gln Val Arg Asp Glu Gly Gln Tyr Gln Cys Ile Ile Ile
      85             90             95

Tyr Gly Val Ala Trp Asp Tyr Lys Tyr Leu Thr Leu Lys Val Lys Gly
      100            105            110

Ala Ser Tyr Arg Lys Ile Asn Thr His Ile Leu Lys Val Pro Glu Thr
      115            120            125

Asp Glu Val Glu Leu Thr Cys Gln Ala Thr Gly Tyr Pro Leu Ala Glu
      130            135            140

Val Ser Trp Pro Asn Val Ser Val Pro Ala Asn Thr Ser His Ser Arg
      145            150            155            160

Thr Pro Glu Gly Leu Tyr Gln Val Thr Ser Val Leu Arg Leu Lys Pro
      165            170            175

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Pro Pro Gly Arg Asn Phe Ser Cys Val Phe Trp Asn Thr His Val Arg  
180 185 190

Glu Leu Thr Leu Ala Ser Ile Asp Leu Gln Ser Lys Met Glu Pro Arg  
195 200 205

Thr His Pro Thr Trp Leu Leu His Ile Phe Ile Pro Phe Cys Ile Ile  
210 215 220

Ala Phe Ile Phe Ile Ala Thr Val Ile Ala Leu Arg Lys Gln Leu Cys  
225 230 235 240

Gln Lys Leu Tyr Ser Ser Lys Gly Lys  
245

<210> 31  
<211> 660  
<212> DNA  
<213> Homo sapiens

<400> 31  
agctgtggca agtcctcata tcaaatacag aacatgatct tcctcctgct aatgttgagc 60  
ctggaattgc agcttcacca gatagcagct ttattcacag tgacagtccc taaggaactg 120  
tacataatag agcatggcag caatgtgacc ctggaatgca actttgacac tggaagtcac 180  
gtgaaccttg gagcaataac aaccagtttg caaaagggtgg aaaatgatac atccccacac 240  
cgtgaaagag ccactttgct ggaggagcag ctgcccctag ggaaggcctc gttccacata 300  
cctcaagtcc aagtgagggg cgaaggacag taccaatgca taatcatcta tggggtcgcc 360  
tgggactaca agtacctgac tctgaaagtc aaagggtcaga tggaaccag gacccatcca 420  
acttggtctgc ttcacatttt catcccctcc tgcattcattg ctttcatttt catagccaca 480  
gtgatagccc taagaaaaca actctgtcaa aagctgtatt cttcaaaaaga cacaacaaaa 540  
agacctgtca ccacaacaaa gaggggaagtg aacagtgtga tctgaacctg tgggtcttggg 600  
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<210> 32  
<211> 183  
<212> PRT  
<213> Homo sapiens

<400> 32  
Met Ile Phe Leu Leu Leu Met Leu Ser Leu Glu Leu Gln Leu His Gln  
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Ile Ala Ala Leu Phe Thr Val Thr Val Pro Lys Glu Leu Tyr Ile Ile  
20 25 30

Glu His Gly Ser Asn Val Thr Leu Glu Cys Asn Phe Asp Thr Gly Ser  
35 40 45

His Val Asn Leu Gly Ala Ile Thr Thr Ser Leu Gln Lys Val Glu Asn  
50 55 60

Asp Thr Ser Pro His Arg Glu Arg Ala Thr Leu Leu Glu Glu Gln Leu  
65 70 75 80

Pro Leu Gly Lys Ala Ser Phe His Ile Pro Gln Val Gln Val Arg Asp  
85 90 95

Glu Gly Gln Tyr Gln Cys Ile Ile Ile Tyr Gly Val Ala Trp Asp Tyr  
100 105 110

Lys Tyr Leu Thr Leu Lys Val Lys Gly Gln Met Glu Pro Arg Thr His  
115 120 125

Pro Thr Trp Leu Leu His Ile Phe Ile Pro Ser Cys Ile Ile Ala Phe  
130 135 140

Ile Phe Ile Ala Thr Val Ile Ala Leu Arg Lys Gln Leu Cys Gln Lys  
145 150 155 160

Leu Tyr Ser Ser Lys Asp Thr Thr Lys Arg Pro Val Thr Thr Thr Lys  
165 170 175

Arg Glu Val Asn Ser Ala Ile  
180

<210> 33  
<211> 1115  
<212> DNA  
<213> Homo sapiens

<400> 33  
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ctgacctcag gcaatgggaa agctgacttt gatgtcactg ggcctcatgc ccctattctg 180  
gctatggctg ggggacacgt ggagttacag tgccagctgt tccccaatat cagtgccgag 240  
gacatggagc tgaggtggta caggtgccag ccctccctag ctgtgcacat gcatgagaga 300  
gggatggaca tggatggaga gcaaaagtgg cagtacagag gaaggaccac cttcatgagt 360  
gaccacgtgg ccaggggcaa ggccatggtg aggagtcaca gggtcaccac ctttgacaac 420  
aggacatact gctgccgctt caaggatggt gtaaagtctg gcgaggccac tgtgcagggtg 480  
caggtggcag gtaagtcagg gctgggcaga gagcccagaa tccaggtgac agaccagcag 540  
gatggagtca gggcggagtg cacatcagca ggctgtttcc ccaagtcttg ggtggaacgg 600  
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aggctctggg ctgtggcatc cagcttgacg ctctgggaca gggctgtgga gggctctctc 720  
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tggaatgtat cccccaagga caaggggggc ttattagagt cacactctga ggtcctgggg 840  
ttagaacttc aacagatgac tggggggcag gggatacaaa atggaacca taacaattct 900  
caaaatgctt tttcctcaaa cctgaaagtg taaaacctgc tctgaggggt ggggagaaag 960  
accccatcac ctgctaggat gagcagagcg tggggcgatg cagtcattcc ctactgaag 1020  
acatttatgg ggcacctccc tatgcaccag acaggaagga aggaattaca gaaacaaaac 1080  
ctcacaaata tatacaatta ttacgtgtta attaa 1115

<210> 34  
<211> 295  
<212> PRT  
<213> Homo sapiens

<400> 34  
Met Ser Arg Ala Trp Gly Asp Ala Val Ile Pro Ser Leu Ser Val Leu  
1 5 10 15

Arg Ser Phe Ile His Leu Leu Glu Leu Leu Thr Ser Gly Asn Gly Lys  
                   20                                  25                                  30  
 Ala Asp Phe Asp Val Thr Gly Pro His Ala Pro Ile Leu Ala Met Ala  
                   35                                  40                                  45  
 Gly Gly His Val Glu Leu Gln Cys Gln Leu Phe Pro Asn Ile Ser Ala  
                   50                                  55                                  60  
 Glu Asp Met Glu Leu Arg Trp Tyr Arg Cys Gln Pro Ser Leu Ala Val  
                   65                                  70                                  75                                  80  
 His Met His Glu Arg Gly Met Asp Met Asp Gly Glu Gln Lys Trp Gln  
                                   85                                  90                                  95  
 Tyr Arg Gly Arg Thr Thr Phe Met Ser Asp His Val Ala Arg Gly Lys  
                                   100                                  105                                  110  
 Ala Met Val Arg Ser His Arg Val Thr Thr Phe Asp Asn Arg Thr Tyr  
                                   115                                  120                                  125  
 Cys Cys Arg Phe Lys Asp Gly Val Lys Phe Gly Glu Ala Thr Val Gln  
                                   130                                  135                                  140  
 Val Gln Val Ala Gly Lys Ser Gly Leu Gly Arg Glu Pro Arg Ile Gln  
                                   145                                  150                                  155                                  160  
 Val Thr Asp Gln Gln Asp Gly Val Arg Ala Glu Cys Thr Ser Ala Gly  
                                   165                                  170                                  175  
 Cys Phe Pro Lys Ser Trp Val Glu Arg Arg Asp Phe Arg Gly Gln Ala  
                                   180                                  185                                  190  
 Arg Pro Ala Val Thr Asn Leu Ser Ala Ser Ala Thr Thr Arg Leu Trp  
                                   195                                  200                                  205  
 Ala Val Ala Ser Ser Leu Thr Leu Trp Asp Arg Ala Val Glu Gly Leu  
                                   210                                  215                                  220  
 Ser Cys Ser Ile Ser Ser Pro Leu Leu Pro Glu Arg Ser Val Ser Gly  
                                   225                                  230                                  235                                  240  
 Ile His Trp Gly Ser Trp Asn Val Ser Pro Lys Asp Lys Gly Gly Leu  
                                   245                                  250                                  255  
 Leu Glu Ser His Ser Glu Val Leu Gly Leu Glu Leu Gln Gln Met Thr  
                                   260                                  265                                  270  
 Gly Gly Gln Gly Ile Gln Asn Gly Thr His Asn Asn Ser Gln Asn Ala  
                                   275                                  280                                  285  
 Phe Ser Ser Asn Leu Lys Val  
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<211> 961  
 <212> PRT  
 <213> Mus musculus

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 Gly Ala Arg Gly Gln Leu Val Gly Gly Ser Gly Leu Pro Gly Ala Val  
           20                  25                  30  
 Asp Val Asp Glu Cys Ser Glu Gly Thr Asp Asp Cys His Ile Asp Ala  
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 Ile Cys Gln Asn Thr Pro Lys Ser Tyr Lys Cys Leu Cys Lys Pro Gly  
       50                  55                  60  
 Tyr Lys Gly Glu Gly Arg Gln Cys Glu Asp Ile Asp Glu Cys Glu Asn  
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 Asp Tyr Tyr Asn Gly Gly Cys Val His Asp Cys Ile Asn Ile Pro Gly  
           85                  90                  95  
 Asn Tyr Arg Cys Thr Cys Phe Asp Gly Phe Met Leu Ala His Asp Gly  
          100                 105                 110  
 His Asn Cys Leu Asp Val Asp Glu Cys Gln Asp Asn Asn Gly Gly Cys  
      115                 120                 125  
 Gln Gln Ile Cys Val Asn Ala Met Gly Ser Tyr Glu Cys Gln Cys His  
      130                 135                 140  
 Ser Gly Phe Phe Leu Ser Asp Asn Gln His Thr Cys Ile His Arg Ser  
 145                 150                 155                 160  
 Asn Glu Gly Met Asn Cys Met Asn Lys Asp His Gly Cys Ala His Ile  
          165                 170                 175  
 Cys Arg Glu Thr Pro Lys Gly Gly Val Ala Cys Asp Cys Arg Pro Gly  
          180                 185                 190  
 Phe Asp Leu Ala Gln Asn Gln Lys Asp Cys Thr Leu Thr Cys Asn Tyr  
      195                 200                 205  
 Gly Asn Gly Gly Cys Gln His Ser Cys Glu Asp Thr Asp Thr Gly Pro  
      210                 215                 220  
 Met Cys Gly Cys His Gln Lys Tyr Ala Leu His Ala Asp Gly Arg Thr  
 225                 230                 235                 240  
 Cys Ile Glu Thr Cys Ala Val Asn Asn Gly Gly Cys Asp Arg Thr Cys  
          245                 250                 255  
 Lys Asp Thr Ala Thr Gly Val Arg Cys Ser Cys Pro Val Gly Phe Thr  
          260                 265                 270  
 Leu Gln Pro Asp Gly Lys Thr Cys Lys Asp Ile Asn Glu Cys Leu Met

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Glu	Cys	Gly	Cys	Gln	Lys	Gly	His	Lys	Leu	Leu	Thr	Asp	Glu	Arg	Thr	
305					310					315					320	
Cys	Gln	Asp	Ile	Asp	Glu	Cys	Ser	Phe	Glu	Arg	Thr	Cys	Asp	His	Ile	
325					330					335						
Cys	Ile	Asn	Ser	Pro	Gly	Ser	Phe	Gln	Cys	Leu	Cys	Arg	Arg	Gly	Tyr	
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Thr	Leu	Tyr	Gly	Thr	Thr	His	Cys	Gly	Asp	Val	Asp	Glu	Cys	Ser	Met	
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Asn	Asn	Gly	Ser	Cys	Glu	Gln	Gly	Cys	Val	Asn	Thr	Arg	Gly	Ser	Tyr	
370					375					380						
Glu	Cys	Val	Cys	Pro	Pro	Gly	Arg	Arg	Leu	His	Trp	Asn	Gln	Lys	Asp	
385					390					395					400	
Cys	Val	Glu	Met	Asn	Gly	Cys	Leu	Ser	Arg	Ser	Lys	Ala	Ser	Ala	Gln	
405					410					415						
Ala	Gln	Leu	Ser	Cys	Gly	Lys	Val	Gly	Gly	Val	Glu	Asn	Cys	Phe	Leu	
420					425					430						
Ser	Cys	Leu	Gly	His	Ser	Leu	Phe	Met	Pro	Asp	Ser	Glu	Ser	Ser	Tyr	
435					440					445						
Ile	Leu	Ser	Cys	Gly	Val	Pro	Gly	Leu	Gln	Gly	Lys	Thr	Leu	Pro	Lys	
450					455					460						
Arg	Asn	Gly	Thr	Ser	Ser	Ser	Thr	Gly	Pro	Gly	Cys	Ser	Asp	Ala	Pro	
465					470					475					480	
Thr	Thr	Pro	Ile	Arg	Gln	Lys	Ala	Arg	Phe	Lys	Ile	Arg	Asp	Ala	Lys	
485					490					495						
Cys	His	Leu	Gln	Pro	Arg	Ser	Gln	Glu	Arg	Ala	Lys	Asp	Thr	Leu	Arg	
500					505					510						
His	Pro	Leu	Leu	Asp	Asn	Cys	His	Val	Thr	Phe	Val	Thr	Leu	Lys	Cys	
515					520					525						
Asp	Ser	Ser	Lys	Lys	Arg	Arg	Arg	Gly	Arg	Lys	Ser	Pro	Ser	Lys	Glu	
530					535					540						
Val	Ser	His	Ile	Thr	Ala	Glu	Phe	Glu	Val	Glu	Met	Lys	Val	Asp	Glu	
545					550					555					560	
Ala	Ser	Gly	Thr	Cys	Glu	Ala	Asp	Cys	Met	Arg	Lys	Arg	Ala	Glu	Gln	
565					570					575						
Ser	Leu	Gln	Ala	Ala	Ile	Lys	Ile	Leu	Arg	Lys	Ser	Thr	Gly	Arg	Asn	

580						585						590					
Gln	Phe	Tyr	Val	Gln	Val	Leu	Gly	Thr	Glu	Tyr	Glu	Val	Ala	Gln	Arg		
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Pro	Ala	Lys	Ala	Leu	Glu	Gly	Thr	Gly	Thr	Cys	Gly	Ile	Gly	Gln	Ile		
610						615						620					
Leu	Gln	Asp	Gly	Lys	Cys	Val	Pro	Cys	Ala	Pro	Gly	Thr	Tyr	Phe	Ser		
625						630						635					
Gly	Asp	Pro	Gly	Gln	Cys	Met	Pro	Cys	Val	Ser	Gly	Thr	Tyr	Gln	Asp		
645						650						655					
Met	Glu	Gly	Gln	Leu	Ser	Cys	Thr	Pro	Cys	Pro	Ser	Ser	Glu	Gly	Leu		
660						665						670					
Gly	Leu	Ala	Gly	Ala	Arg	Asn	Val	Ser	Glu	Cys	Gly	Gly	Gln	Cys	Ser		
675						680						685					
Pro	Gly	Tyr	Phe	Ser	Ala	Asp	Gly	Phe	Lys	Pro	Cys	Gln	Ala	Cys	Pro		
690						695						700					
Val	Gly	Thr	Tyr	Gln	Pro	Glu	Pro	Gly	Arg	Thr	Gly	Cys	Phe	Pro	Cys		
705						710						715					
Gly	Gly	Gly	Leu	Leu	Thr	Lys	His	Thr	Gly	Thr	Ala	Ser	Phe	Gln	Asp		
725						730						735					
Cys	Glu	Ala	Lys	Val	His	Cys	Ser	Pro	Gly	His	His	Tyr	Asn	Thr	Thr		
740						745						750					
Thr	His	Arg	Cys	Ile	Arg	Cys	Pro	Val	Gly	Thr	Tyr	Gln	Pro	Glu	Phe		
755						760						765					
Gly	Gln	Asn	His	Cys	Ile	Ser	Cys	Pro	Gly	Asn	Thr	Ser	Thr	Asp	Phe		
770						775						780					
Asp	Gly	Ser	Thr	Asn	Val	Thr	His	Cys	Lys	Asn	Gln	His	Cys	Gly	Gly		
785						790						795					
Glu	Leu	Gly	Asp	Tyr	Thr	Gly	Tyr	Ile	Glu	Ser	Pro	Asn	Tyr	Pro	Gly		
805						810						815					
Asp	Tyr	Pro	Ala	Asn	Ala	Glu	Cys	Val	Trp	His	Ile	Ala	Pro	Pro	Pro		
820						825						830					
Lys	Arg	Arg	Ile	Leu	Ile	Val	Val	Pro	Glu	Ile	Phe	Leu	Pro	Ile	Glu		
835						840						845					
Asp	Glu	Cys	Gly	Asp	Val	Leu	Val	Met	Arg	Lys	Ser	Ala	Ser	Pro	Thr		
850						855						860					
Ser	Val	Thr	Thr	Tyr	Glu	Thr	Cys	Gln	Thr	Tyr	Glu	Arg	Pro	Ile	Ala		
865						870						875					
Phe	Thr	Ser	Arg	Ser	Arg	Lys	Leu	Trp	Ile	Gln	Phe	Lys	Ser	Asn	Glu		

				885					890							895			
Ala	Asn	Ser	Gly	Lys	Gly	Phe	Gln	Val	Pro	Tyr	Val	Thr	Tyr	Asp	Gly				
			900					905						910					
Lys	Ser	Pro	Pro	Ser	Cys	His	Ser	Pro	Leu	Cys	Ala	Ser	Gln	Gly	Leu				
		915					920					925							
Ala	Trp	Gly	Leu	Arg	Asn	Glu	Leu	His	Ile	Pro	Ala	Ser	Asp	Arg	Ala				
	930					935					940								
Gln	Thr	Gln	Arg	Gln	Lys	Leu	Gly	Leu	Gly	Asn	Ala	Glu	Thr	Gln	Gly				
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Val

<210> 36  
 <211> 999  
 <212> PRT  
 <213> Homo sapiens

<400> 36																			
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Leu	Leu	Leu	Leu	Leu	Leu	Pro	Pro	Leu	Leu	Leu	Leu	Ala	Gly	Ala	Val				
			20					25					30						
Pro	Pro	Gly	Arg	Gly	Arg	Ala	Ala	Gly	Pro	Gln	Glu	Asp	Val	Asp	Glu				
		35					40					45							
Cys	Ala	Gln	Gly	Leu	Asp	Asp	Cys	His	Ala	Asp	Ala	Leu	Cys	Gln	Asn				
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Thr	Pro	Thr	Ser	Tyr	Lys	Cys	Ser	Cys	Lys	Pro	Gly	Tyr	Gln	Gly	Glu				
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Gly	Arg	Gln	Cys	Glu	Asp	Ile	Asp	Glu	Cys	Gly	Asn	Glu	Leu	Asn	Gly				
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Gly	Cys	Val	His	Asp	Cys	Leu	Asn	Ile	Pro	Gly	Asn	Tyr	Arg	Cys	Thr				
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Cys	Phe	Asp	Gly	Phe	Met	Leu	Ala	His	Asp	Gly	His	Asn	Cys	Leu	Asp				
		115					120					125							
Val	Asp	Glu	Cys	Leu	Glu	Asn	Asn	Gly	Gly	Cys	Gln	His	Thr	Cys	Val				
	130					135					140								
Asn	Val	Met	Gly	Ser	Tyr	Glu	Cys	Cys	Cys	Lys	Glu	Gly	Phe	Phe	Leu				
145					150					155					160				
Ser	Asp	Asn	Gln	His	Thr	Cys	Ile	His	Arg	Ser	Glu	Glu	Gly	Leu	Ser				
				165					170					175					



Cys	Met	Asn	Lys	Asp	His	Gly	Cys	Ser	His	Ile	Cys	Lys	Glu	Ala	Pro		
			180					185					190				
Arg	Gly	Ser	Val	Ala	Cys	Glu	Cys	Arg	Pro	Gly	Phe	Glu	Leu	Ala	Lys		
		195					200					205					
Asn	Gln	Arg	Asp	Cys	Ile	Leu	Thr	Cys	Asn	His	Gly	Asn	Gly	Gly	Cys		
	210					215					220						
Gln	His	Ser	Cys	Asp	Asp	Thr	Ala	Asp	Gly	Pro	Glu	Cys	Ser	Cys	His		
225					230					235					240		
Pro	Gln	Tyr	Lys	Met	His	Thr	Asp	Gly	Arg	Ser	Cys	Leu	Glu	Arg	Glu		
				245					250					255			
Asp	Thr	Val	Leu	Glu	Val	Thr	Glu	Ser	Asn	Thr	Thr	Ser	Val	Val	Asp		
			260					265					270				
Gly	Asp	Lys	Arg	Val	Lys	Arg	Arg	Leu	Leu	Met	Glu	Thr	Cys	Ala	Val		
	275						280					285					
Asn	Asn	Gly	Gly	Cys	Asp	Arg	Thr	Cys	Lys	Asp	Thr	Ser	Thr	Gly	Val		
	290					295					300						
His	Cys	Ser	Cys	Pro	Val	Gly	Phe	Thr	Leu	Gln	Leu	Asp	Gly	Lys	Thr		
305					310					315					320		
Cys	Lys	Asp	Ile	Asp	Glu	Cys	Gln	Thr	Arg	Asn	Gly	Gly	Cys	Asp	His		
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Phe	Cys	Lys	Asn	Ile	Val	Gly	Ser	Phe	Asp	Cys	Gly	Cys	Lys	Lys	Gly		
			340					345					350				
Phe	Lys	Leu	Leu	Thr	Asp	Glu	Lys	Ser	Cys	Gln	Asp	Val	Asp	Glu	Cys		
		355					360					365					
Ser	Leu	Asp	Arg	Thr	Cys	Asp	His	Ser	Cys	Ile	Asn	His	Pro	Gly	Thr		
	370					375					380						
Phe	Ala	Cys	Ala	Cys	Asn	Arg	Gly	Tyr	Thr	Leu	Tyr	Gly	Phe	Thr	His		
385					390					395					400		
Cys	Gly	Asp	Thr	Asn	Glu	Cys	Ser	Ile	Asn	Asn	Gly	Gly	Cys	Gln	Gln		
				405					410					415			
Val	Cys	Val	Asn	Thr	Val	Gly	Ser	Tyr	Glu	Cys	Gln	Cys	His	Pro	Gly		
			420					425					430				
Tyr	Lys	Leu	His	Trp	Asn	Lys	Lys	Asp	Cys	Val	Glu	Val	Lys	Gly	Leu		
		435					440					445					
Leu	Pro	Thr	Ser	Val	Ser	Pro	Arg	Val	Ser	Leu	His	Cys	Gly	Lys	Ser		
	450					455					460						
Gly	Gly	Gly	Asp	Gly	Cys	Phe	Leu	Arg	Cys	His	Ser	Gly	Ile	His	Leu		
465					470					475					480		

Ser Ser Asp Val Thr Thr Ile Arg Thr Ser Val Thr Phe Lys Leu Asn  
 485 490 495  
 Glu Gly Lys Cys Ser Leu Lys Asn Ala Glu Leu Phe Pro Glu Gly Leu  
 500 505 510  
 Arg Pro Ala Leu Pro Glu Lys His Ser Ser Val Lys Glu Ser Phe Arg  
 515 520 525  
 Tyr Val Asn Leu Thr Cys Ser Ser Gly Lys Gln Val Pro Gly Ala Pro  
 530 535 540  
 Gly Arg Pro Ser Thr Pro Lys Glu Met Phe Ile Thr Val Glu Phe Glu  
 545 550 555 560  
 Leu Glu Thr Asn Gln Lys Glu Val Thr Ala Ser Cys Asp Leu Ser Cys  
 565 570 575  
 Ile Val Lys Arg Thr Glu Lys Arg Leu Arg Lys Ala Ile Arg Thr Leu  
 580 585 590  
 Arg Lys Ala Val His Arg Glu Gln Phe His Leu Gln Leu Ser Gly Met  
 595 600 605  
 Asn Leu Asp Val Ala Lys Lys Pro Pro Arg Thr Ser Glu Arg Gln Ala  
 610 615 620  
 Glu Ser Cys Gly Val Gly Gln Gly His Ala Glu Asn Gln Cys Val Ser  
 625 630 635 640  
 Cys Arg Ala Gly Thr Tyr Tyr Asp Gly Ala Arg Glu Arg Cys Ile Leu  
 645 650 655  
 Cys Pro Asn Gly Thr Phe Gln Asn Glu Glu Gly Gln Met Thr Cys Glu  
 660 665 670  
 Pro Cys Pro Arg Pro Gly Asn Ser Gly Ala Leu Lys Thr Pro Glu Ala  
 675 680 685  
 Trp Asn Met Ser Glu Cys Gly Gly Leu Cys Gln Pro Gly Glu Tyr Ser  
 690 695 700  
 Ala Asp Gly Phe Ala Pro Cys Gln Leu Cys Ala Leu Gly Thr Phe Gln  
 705 710 715 720  
 Pro Glu Ala Gly Arg Thr Ser Cys Phe Pro Cys Gly Gly Gly Leu Ala  
 725 730 735  
 Thr Lys His Gln Gly Ala Thr Ser Phe Gln Asp Cys Glu Thr Arg Val  
 740 745 750  
 Gln Cys Ser Pro Gly His Phe Tyr Asn Thr Thr Thr His Arg Cys Ile  
 755 760 765  
 Arg Cys Pro Val Gly Thr Tyr Gln Pro Glu Phe Gly Lys Asn Asn Cys  
 770 775 780

Val Ser Cys Pro Gly Asn Thr Thr Thr Asp Phe Asp Gly Ser Thr Asn  
 785 790 795 800  
 Ile Thr Gln Cys Lys Asn Arg Arg Cys Gly Gly Glu Leu Gly Asp Phe  
 805 810 815  
 Thr Gly Tyr Ile Glu Ser Pro Asn Tyr Pro Gly Asn Tyr Pro Ala Asn  
 820 825 830  
 Thr Glu Cys Thr Trp Thr Ile Asn Pro Pro Pro Lys Arg Arg Ile Leu  
 835 840 845  
 Ile Val Val Pro Glu Ile Phe Leu Pro Ile Glu Asp Asp Cys Gly Asp  
 850 855 860  
 Tyr Leu Val Met Arg Lys Thr Ser Ser Ser Asn Ser Val Thr Thr Tyr  
 865 870 875 880  
 Glu Thr Cys Gln Thr Tyr Glu Arg Pro Ile Ala Phe Thr Ser Arg Ser  
 885 890 895  
 Lys Lys Leu Trp Ile Gln Phe Lys Ser Asn Glu Gly Asn Ser Ala Arg  
 900 905 910  
 Gly Phe Gln Val Pro Tyr Val Thr Tyr Asp Glu Asp Tyr Gln Glu Leu  
 915 920 925  
 Ile Glu Asp Ile Val Arg Asp Gly Arg Leu Tyr Ala Ser Glu Asn His  
 930 935 940  
 Gln Glu Ile Leu Lys Asp Lys Lys Leu Ile Lys Ala Leu Phe Asp Val  
 945 950 955 960  
 Leu Ala His Pro Gln Asn Tyr Phe Lys Tyr Thr Ala Gln Glu Ser Arg  
 965 970 975  
 Glu Met Phe Pro Arg Ser Phe Ile Arg Leu Leu Arg Ser Lys Val Ser  
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 Arg Phe Leu Arg Pro Tyr Lys  
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<210> 37  
 <211> 997  
 <212> PRT  
 <213> Mus musculus

<400> 37  
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 Asp Arg Gly Leu Thr Asn Gly Pro Ser Glu Asp Val Asp Glu Cys Ala  
 35 40 45

Gln	Gly	Leu	Asp	Asp	Cys	His	Ala	Asp	Ala	Leu	Cys	Gln	Asn	Thr	Pro	
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Thr	Ser	Tyr	Lys	Cys	Ser	Cys	Lys	Pro	Gly	Tyr	Gln	Gly	Glu	Gly	Arg	
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Gln	Cys	Glu	Asp	Met	Asp	Glu	Cys	Asp	Asn	Thr	Leu	Asn	Gly	Gly	Cys	
				85					90					95		
Val	His	Asp	Cys	Leu	Asn	Ile	Pro	Gly	Asn	Tyr	Arg	Cys	Thr	Cys	Phe	
			100					105					110			
Asp	Gly	Phe	Met	Leu	Ala	His	Asp	Gly	His	Asn	Cys	Leu	Asp	Met	Asp	
		115					120					125				
Glu	Cys	Leu	Glu	Asn	Asn	Gly	Gly	Cys	Gln	His	Ile	Cys	Thr	Asn	Val	
	130					135					140					
Ile	Gly	Ser	Tyr	Glu	Cys	Arg	Cys	Lys	Glu	Gly	Phe	Phe	Leu	Ser	Asp	
145					150					155					160	
Asn	Gln	His	Thr	Cys	Ile	His	Arg	Ser	Glu	Glu	Gly	Leu	Ser	Cys	Met	
				165					170					175		
Asn	Lys	Asp	His	Gly	Cys	Gly	His	Ile	Cys	Lys	Glu	Ala	Pro	Arg	Gly	
			180					185					190			
Ser	Val	Ala	Cys	Glu	Cys	Arg	Pro	Gly	Phe	Glu	Leu	Ala	Lys	Asn	Gln	
		195					200					205				
Lys	Asp	Cys	Ile	Leu	Thr	Cys	Asn	His	Gly	Asn	Gly	Gly	Cys	Gln	His	
	210					215					220					
Ser	Cys	Glu	Asp	Thr	Ala	Glu	Gly	Pro	Glu	Cys	Ser	Cys	His	Pro	Arg	
225					230					235					240	
Tyr	Arg	Leu	His	Ala	Asp	Gly	Arg	Ser	Cys	Leu	Glu	Gln	Glu	Gly	Thr	
				245					250					255		
Val	Leu	Glu	Gly	Thr	Glu	Ser	Asn	Ala	Thr	Ser	Val	Ala	Asp	Gly	Asp	
			260					265					270			
Lys	Arg	Val	Lys	Arg	Arg	Leu	Leu	Met	Glu	Thr	Cys	Ala	Val	Asn	Asn	
		275					280					285				
Gly	Gly	Cys	Asp	Arg	Thr	Cys	Lys	Asp	Thr	Ser	Thr	Gly	Val	His	Cys	
	290					295					300					
Ser	Cys	Pro	Thr	Gly	Phe	Thr	Leu	Gln	Val	Asp	Gly	Lys	Thr	Cys	Lys	
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Asp	Ile	Asp	Glu	Cys	Gln	Thr	Arg	Asn	Gly	Gly	Cys	Asn	His	Phe	Cys	
				325					330					335		
Lys	Asn	Thr	Val	Gly	Ser	Phe	Asp	Cys	Ser	Cys	Lys	Lys	Gly	Phe	Lys	
			340					345					350			

Leu Leu Thr Asp Glu Lys Ser Cys Gln Asp Val Asp Glu Cys Ser Leu  
 355 360 365  
 Glu Arg Thr Cys Asp His Ser Cys Ile Asn His Pro Gly Thr Phe Ile  
 370 375 380  
 Cys Ala Cys Asn Pro Gly Tyr Thr Leu Tyr Ser Phe Thr His Cys Gly  
 385 390 395 400  
 Asp Thr Asn Glu Cys Ser Val Asn Asn Gly Gly Cys Gln Gln Val Cys  
 405 410 415  
 Ile Asn Thr Val Gly Ser Tyr Glu Cys Gln Cys His Pro Gly Phe Lys  
 420 425 430  
 Leu His Trp Asn Lys Lys Asp Cys Val Glu Val Lys Gly Phe Pro Pro  
 435 440 445  
 Thr Ser Met Thr Pro Arg Val Ser Leu His Cys Gly Lys Ser Gly Gly  
 450 455 460  
 Gly Asp Arg Cys Phe Leu Arg Cys Arg Ser Gly Ile His Leu Ser Ser  
 465 470 475 480  
 Asp Val Val Thr Val Arg Thr Ser Val Thr Phe Lys Leu Asn Glu Gly  
 485 490 495  
 Lys Cys Ser Leu Gln Lys Ala Lys Leu Ser Pro Glu Gly Leu Arg Pro  
 500 505 510  
 Ala Leu Pro Glu Arg His Ser Ser Val Lys Glu Ser Phe Gln Tyr Ala  
 515 520 525  
 Asn Leu Thr Cys Ser Pro Gly Lys Gln Val Pro Gly Ala Leu Gly Arg  
 530 535 540  
 Leu Asn Ala Pro Lys Glu Met Phe Ile Thr Val Glu Phe Glu Arg Glu  
 545 550 555 560  
 Thr Tyr Glu Lys Glu Val Thr Ala Ser Cys Asn Leu Ser Cys Val Val  
 565 570 575  
 Lys Arg Thr Glu Lys Arg Leu Arg Lys Ala Leu Arg Thr Leu Lys Arg  
 580 585 590  
 Ala Ala His Arg Glu Gln Phe His Leu Gln Leu Ser Gly Met Asp Leu  
 595 600 605  
 Asp Met Ala Lys Thr Pro Ser Arg Val Ser Gly Gln His Glu Glu Thr  
 610 615 620  
 Cys Gly Val Gly Gln Gly His Glu Glu Ser Gln Cys Val Ser Cys Arg  
 625 630 635 640  
 Ala Gly Thr Tyr Tyr Asp Gly Ser Gln Glu Arg Cys Ile Leu Cys Pro  
 645 650 655

Asn	Gly	Thr	Phe	Gln	Asn	Glu	Glu	Gly	Gln	Val	Thr	Cys	Glu	Pro	Cys		
			660					665					670				
Pro	Arg	Pro	Glu	Asn	Leu	Gly	Ser	Leu	Lys	Ile	Ser	Glu	Ala	Trp	Asn		
		675					680					685					
Val	Ser	Asp	Cys	Gly	Gly	Leu	Cys	Gln	Pro	Gly	Glu	Tyr	Ser	Ala	Asn		
	690					695					700						
Gly	Phe	Ala	Pro	Cys	Gln	Leu	Cys	Ala	Leu	Gly	Thr	Phe	Gln	Pro	Asp		
705					710					715					720		
Val	Gly	Arg	Thr	Ser	Cys	Leu	Ser	Cys	Gly	Gly	Gly	Leu	Pro	Thr	Lys		
				725					730					735			
His	Leu	Gly	Ala	Thr	Ser	Phe	Gln	Asp	Cys	Glu	Thr	Arg	Val	Gln	Cys		
			740					745					750				
Ser	Pro	Gly	His	Phe	Tyr	Asn	Thr	Thr	Thr	His	Arg	Cys	Ile	Arg	Cys		
		755					760					765					
Pro	Leu	Gly	Thr	Tyr	Gln	Pro	Glu	Phe	Gly	Lys	Asn	Asn	Cys	Val	Ser		
	770					775					780						
Cys	Pro	Gly	Asn	Thr	Thr	Thr	Asp	Phe	Asp	Gly	Ser	Thr	Asn	Ile	Thr		
785					790					795					800		
Gln	Cys	Lys	Asn	Arg	Lys	Cys	Gly	Gly	Glu	Leu	Gly	Asp	Phe	Thr	Gly		
			805						810					815			
Tyr	Ile	Glu	Ser	Pro	Asn	Tyr	Pro	Gly	Asn	Tyr	Pro	Ala	Asn	Ser	Glu		
			820					825					830				
Cys	Thr	Trp	Thr	Ile	Asn	Pro	Pro	Pro	Lys	Arg	Arg	Ile	Leu	Ile	Val		
		835					840					845					
Val	Pro	Glu	Ile	Phe	Leu	Pro	Ile	Glu	Asp	Asp	Cys	Gly	Asp	Tyr	Leu		
	850					855					860						
Val	Met	Arg	Lys	Thr	Ser	Ser	Ser	Asn	Ser	Val	Thr	Thr	Tyr	Glu	Thr		
865					870					875					880		
Cys	Gln	Thr	Tyr	Glu	Arg	Pro	Ile	Ala	Phe	Thr	Ser	Arg	Ser	Lys	Lys		
				885					890					895			
Leu	Trp	Ile	Gln	Phe	Lys	Ser	Asn	Glu	Gly	Asn	Ser	Ala	Arg	Gly	Phe		
		900						905					910				
Gln	Val	Pro	Tyr	Val	Thr	Tyr	Asp	Glu	Asp	Tyr	Gln	Glu	Leu	Ile	Glu		
		915					920					925					
Asp	Ile	Val	Arg	Asp	Gly	Arg	Leu	Tyr	Ala	Ser	Glu	Asn	His	Gln	Glu		
	930					935					940						
Ile	Leu	Lys	Asp	Lys	Lys	Leu	Ile	Lys	Ala	Leu	Phe	Asp	Val	Leu	Ala		
945					950					955					960		

His Pro Gln Asn Tyr Phe Lys Tyr Thr Ala Gln Glu Ser Arg Glu Met  
 965 970 975

Phe Pro Arg Ser Phe Ile Arg Leu Leu Arg Ser Lys Val Ser Arg Phe  
 980 985 990

Leu Arg Pro Tyr Lys  
 995

<210> 38  
 <211> 161  
 <212> PRT  
 <213> Homo sapiens

<400> 38  
 Met Gly Ala Ala Ala Val Arg Trp His Leu Cys Val Leu Leu Ala Leu  
 1 5 10 15

Gly Thr Arg Gly Arg Leu Ala Gly Gly Ser Gly Leu Pro Gly Ser Val  
 20 25 30

Asp Val Asp Glu Cys Ser Glu Gly Thr Asp Asp Cys His Ile Asp Ala  
 35 40 45

Ile Cys Gln Asn Thr Pro Lys Ser Tyr Lys Cys Leu Cys Lys Pro Gly  
 50 55 60

Tyr Lys Gly Glu Gly Lys Gln Cys Glu Asp Ile Asp Glu Cys Glu Asn  
 65 70 75 80

Asp Tyr Tyr Asn Gly Gly Cys Val His Glu Cys Ile Asn Ile Pro Gly  
 85 90 95

Asn Tyr Arg Cys Thr Cys Phe Asp Gly Phe Met Leu Ala His Asp Gly  
 100 105 110

His Asn Cys Leu Asp Val Asp Glu Cys Gln Asp Asn Asn Gly Gly Cys  
 115 120 125

Gln Gln Ile Cys Val Asn Ala Met Gly Ser Tyr Glu Cys Gln Cys His  
 130 135 140

Ser Gly Phe Phe Leu Ser Asp Asn Gln His Thr Cys Ile His Arg Ser  
 145 150 155 160

Asn

<210> 39  
 <211> 956  
 <212> PRT  
 <213> Homo sapiens

<400> 39

Met	Glu	Lys	Met	Leu	Ala	Gly	Cys	Phe	Leu	Leu	Ile	Leu	Gly	Gln	Ile	
1				5					10					15		
Val	Leu	Leu	Pro	Ala	Glu	Ala	Arg	Glu	Arg	Ser	Arg	Gly	Arg	Ser	Ile	
			20					25					30			
Ser	Arg	Gly	Arg	His	Ala	Arg	Thr	His	Pro	Gln	Thr	Ala	Leu	Leu	Glu	
		35					40					45				
Ser	Ser	Cys	Glu	Asn	Lys	Arg	Ala	Asp	Leu	Val	Phe	Ile	Ile	Asp	Ser	
	50					55					60					
Ser	Arg	Ser	Val	Asn	Thr	His	Asp	Tyr	Ala	Lys	Val	Lys	Glu	Phe	Ile	
65					70					75					80	
Val	Asp	Ile	Leu	Gln	Phe	Leu	Asp	Ile	Gly	Pro	Asp	Val	Thr	Arg	Val	
				85					90					95		
Gly	Leu	Leu	Gln	Tyr	Gly	Ser	Thr	Val	Lys	Asn	Glu	Phe	Ser	Leu	Lys	
			100					105					110			
Thr	Phe	Lys	Arg	Lys	Ser	Glu	Val	Glu	Arg	Ala	Val	Lys	Arg	Met	Arg	
		115					120					125				
His	Leu	Ser	Thr	Gly	Thr	Met	Thr	Gly	Leu	Ala	Ile	Gln	Tyr	Ala	Leu	
	130					135					140					
Asn	Ile	Ala	Phe	Ser	Glu	Ala	Glu	Gly	Ala	Arg	Pro	Leu	Arg	Glu	Asn	
145					150					155					160	
Val	Pro	Arg	Val	Ile	Met	Ile	Val	Thr	Asp	Gly	Arg	Pro	Gln	Asp	Ser	
				165					170					175		
Val	Ala	Glu	Val	Ala	Ala	Lys	Ala	Arg	Asp	Thr	Gly	Ile	Leu	Ile	Phe	
			180					185					190			
Ala	Ile	Gly	Val	Gly	Gln	Val	Asp	Phe	Asn	Thr	Leu	Lys	Ser	Ile	Gly	
		195					200					205				
Ser	Glu	Pro	His	Glu	Asp	His	Val	Phe	Leu	Val	Ala	Asn	Phe	Ser	Gln	
	210					215					220					
Ile	Glu	Thr	Leu	Thr	Ser	Val	Phe	Gln	Lys	Lys	Leu	Cys	Thr	Ala	His	
225					230					235					240	
Met	Cys	Ser	Thr	Leu	Glu	His	Asn	Cys	Ala	His	Phe	Cys	Ile	Asn	Ile	
				245					250					255		
Pro	Gly	Ser	Tyr	Val	Cys	Arg	Cys	Lys	Gln	Gly	Tyr	Ile	Leu	Asn	Ser	
			260					265					270			
Asp	Gln	Thr	Thr	Cys	Arg	Ile	Gln	Asp	Leu	Cys	Ala	Met	Glu	Asp	His	
		275					280					285				
Asn	Cys	Glu	Gln	Leu	Cys	Val	Asn	Val	Pro	Gly	Ser	Phe	Val	Cys	Gln	
	290					295					300					



Cys Tyr Ser Gly Tyr Ala Leu Ala Glu Asp Gly Lys Arg Cys Val Ala  
 305 310 315 320  
 Val Asp Tyr Cys Ala Ser Glu Asn His Gly Cys Glu His Glu Cys Val  
 325 330 335  
 Asn Ala Asp Gly Ser Tyr Leu Cys Gln Cys His Glu Gly Phe Ala Leu  
 340 345 350  
 Asn Pro Asp Glu Lys Thr Cys Thr Lys Ile Asp Tyr Cys Ala Ser Ser  
 355 360 365  
 Asn His Gly Cys Gln His Glu Cys Val Asn Thr Asp Asp Ser Tyr Ser  
 370 375 380  
 Cys His Cys Leu Lys Gly Phe Thr Leu Asn Pro Asp Lys Lys Thr Cys  
 385 390 395 400  
 Arg Arg Ile Asn Tyr Cys Ala Leu Asn Lys Pro Gly Cys Glu His Glu  
 405 410 415  
 Cys Val Asn Met Glu Glu Ser Tyr Tyr Cys Arg Cys His Arg Gly Tyr  
 420 425 430  
 Thr Leu Asp Pro Asn Gly Lys Thr Cys Ser Arg Val Asp His Cys Ala  
 435 440 445  
 Gln Gln Asp His Gly Cys Glu Gln Leu Cys Leu Asn Thr Glu Asp Ser  
 450 455 460  
 Phe Val Cys Gln Cys Ser Glu Gly Phe Leu Ile Asn Glu Asp Leu Lys  
 465 470 475 480  
 Thr Cys Ser Arg Val Asp Tyr Cys Leu Leu Ser Asp His Gly Cys Glu  
 485 490 495  
 Tyr Ser Cys Val Asn Met Asp Arg Ser Phe Ala Cys Gln Cys Pro Glu  
 500 505 510  
 Gly His Val Leu Arg Ser Asp Gly Lys Thr Cys Ala Lys Leu Asp Ser  
 515 520 525  
 Cys Ala Leu Gly Asp His Gly Cys Glu His Ser Cys Val Ser Ser Glu  
 530 535 540  
 Asp Ser Phe Val Cys Gln Cys Phe Glu Gly Tyr Ile Leu Arg Glu Asp  
 545 550 555 560  
 Gly Lys Thr Cys Arg Arg Lys Asp Val Cys Gln Ala Ile Asp His Gly  
 565 570 575  
 Cys Glu His Ile Cys Val Asn Ser Asp Asp Ser Tyr Thr Cys Glu Cys  
 580 585 590  
 Leu Glu Gly Phe Arg Leu Ala Glu Asp Gly Lys Arg Cys Arg Arg Lys  
 595 600 605

66

His Asp Gln Cys Lys Cys Glu Asn Leu Ile Met Phe Gln Asn Leu Ala  
 915 920 925

Asn Glu Glu Val Arg Lys Leu Thr Gln Arg Leu Glu Glu Met Thr Gln  
 930 935 940

Arg Met Glu Ala Leu Glu Asn Arg Leu Arg Tyr Arg  
 945 950 955

<210> 40  
 <211> 329  
 <212> PRT  
 <213> Homo sapiens

<400> 40  
 Met Leu Pro Leu Leu Leu Gly Leu Leu Gly Pro Ala Ala Cys Trp Ala  
 1 5 10 15

Leu Gly Pro Thr Pro Gly Pro Gly Ser Ser Glu Leu Arg Ser Ala Phe  
 20 25 30

Ser Ala Ala Arg Thr Thr Pro Leu Glu Gly Thr Ser Glu Met Ala Val  
 35 40 45

Thr Phe Asp Lys Val Tyr Val Asn Ile Gly Gly Asp Phe Asp Val Ala  
 50 55 60

Thr Gly Gln Phe Arg Cys Arg Val Pro Gly Ala Tyr Phe Phe Ser Phe  
 65 70 75 80

Thr Ala Gly Lys Ala Pro His Lys Ser Leu Ser Val Met Leu Val Arg  
 85 90 95

Asn Arg Asp Glu Val Gln Ala Leu Ala Phe Asp Glu Gln Arg Arg Pro  
 100 105 110

Gly Ala Arg Arg Ala Ala Ser Gln Ser Ala Met Leu Gln Leu Asp Tyr  
 115 120 125

Gly Asp Thr Val Trp Leu Arg Leu His Gly Ala Pro His Tyr Ala Leu  
 130 135 140

Gly Ala Pro Gly Ala Thr Phe Ser Gly Tyr Leu Val Tyr Ala Asp Ala  
 145 150 155 160

Asp Ala Asp Ala Pro Ala Arg Gly Pro Pro Ala Pro Pro Glu Pro Arg  
 165 170 175

Ser Ala Phe Ser Ala Ala Arg Thr Arg Ser Leu Val Gly Ser Asp Ala  
 180 185 190

Gly Pro Gly Pro Arg His Gln Pro Leu Ala Phe Asp Thr Glu Phe Val  
 195 200 205

Asn Ile Gly Gly Asp Phe Asp Ala Ala Ala Gly Val Phe Arg Cys Arg  
 210 215 220

Leu Pro Gly Ala Tyr Phe Phe Ser Phe Thr Leu Gly Lys Leu Pro Arg  
 225 230 235 240  
 Lys Thr Leu Ser Val Lys Leu Met Lys Asn Arg Asp Glu Val Gln Ala  
 245 250 255  
 Met Ile Tyr Asp Asp Gly Ala Ser Arg Arg Arg Glu Met Gln Ser Gln  
 260 265 270  
 Ser Val Met Leu Ala Leu Arg Arg Gly Asp Ala Val Trp Leu Leu Ser  
 275 280 285  
 His Asp His Asp Gly Tyr Gly Ala Tyr Ser Asn His Gly Lys Tyr Ile  
 290 295 300  
 Thr Phe Ser Gly Phe Leu Val Tyr Pro Asp Leu Ala Pro Ala Ala Pro  
 305 310 315 320  
 Pro Gly Leu Gly Ala Ser Glu Leu Leu  
 325

<210> 41  
 <211> 205  
 <212> PRT  
 <213> Mus musculus

<400> 41  
 Met Leu Gln Leu Asp Tyr Gly Asp Thr Val Trp Leu Arg Leu His Gly  
 1 5 10 15  
 Ala Pro Gln Tyr Ala Leu Gly Ala Pro Gly Ala Thr Phe Ser Gly Tyr  
 20 25 30  
 Leu Val Tyr Ala Asp Ala Asp Ala Asp Ala Pro Ala Arg Gly Pro Ala  
 35 40 45  
 Ala Pro Glu Pro Arg Ser Ala Phe Ser Ala Ala Arg Thr Arg Ser Leu  
 50 55 60  
 Val Gly Ser Asp Ala Ala Pro Gly Pro Arg His Arg Pro Leu Ala Phe  
 65 70 75 80  
 Asp Thr Glu Leu Val Asn Ile Gly Gly Asp Phe Asp Ala Ala Ala Gly  
 85 90 95  
 Val Phe Arg Cys Arg Leu Pro Gly Ala Tyr Phe Phe Ser Phe Thr Leu  
 100 105 110  
 Gly Lys Leu Pro Arg Lys Thr Leu Ser Val Lys Leu Met Lys Asn Arg  
 115 120 125  
 Asp Glu Val Gln Ala Met Ile Tyr Asp Asp Gly Ala Ser Arg Arg Arg  
 130 135 140  
 Glu Met Gln Ser Gln Ser Val Met Leu Pro Leu Arg Arg Gly Asp Ala

145		150		155		160
Val Trp Leu Leu Ser His Asp His Asp Gly Tyr Gly Ala Tyr Ser Asn						
		165		170		175
His Gly Lys Tyr Ile Thr Phe Ser Gly Phe Leu Val Tyr Pro Asp Leu						
		180		185		190
Ala Ala Ala Gly Pro Pro Ala Leu Lys Pro Pro Glu Leu						
		195		200		205

<210> 42  
 <211> 205  
 <212> PRT  
 <213> Mus musculus

<400> 42  
 Met Leu Gln Leu Asp Tyr Gly Asp Thr Val Trp Leu Arg Leu His Gly  
 1 5 10 15

Ala Pro Gln Tyr Ala Leu Gly Ala Pro Gly Ala Thr Phe Ser Gly Tyr  
 20 25 30

Leu Val Tyr Ala Asp Ala Asp Ala Asp Ala Pro Ala Arg Gly Pro Ala  
 35 40 45

Ala Pro Glu Pro Arg Ser Ala Phe Ser Ala Ala Arg Thr Arg Ser Leu  
 50 55 60

Val Gly Ser Asp Ala Ala Pro Gly Pro Arg His Arg Pro Leu Ala Phe  
 65 70 75 80

Asp Thr Glu Leu Val Asn Ile Gly Gly Asp Phe Asp Ala Ala Ala Gly  
 85 90 95

Val Phe Arg Cys Arg Leu Pro Gly Ala Tyr Phe Phe Ser Phe Thr Leu  
 100 105 110

Gly Lys Leu Pro Arg Lys Thr Leu Ser Val Lys Leu Met Lys Asn Arg  
 115 120 125

Asp Glu Val Gln Ala Met Ile Tyr Asp Asp Gly Ala Ser Arg Arg Arg  
 130 135 140

Glu Met Gln Ser Gln Ser Val Arg Leu Pro Leu Arg Arg Gly Asp Ala  
 145 150 155 160

Val Trp Leu Leu Ser His Asp His Asp Gly Tyr Gly Ala Tyr Ser Asn  
 165 170 175

His Gly Lys Tyr Ile Thr Phe Ser Gly Phe Leu Val Tyr Pro Asp Leu  
 180 185 190

Ala Ala Ala Gly Pro Pro Ala Leu Lys Pro Pro Glu Leu  
 195 200 205

<210> 43  
 <211> 278  
 <212> PRT  
 <213> Homo sapiens

<400> 43  
 Met Gln Trp Leu Arg Val Arg Glu Ser Pro Gly Glu Ala Thr Gly His  
   1                  5                  10                  15  
 Arg Val Thr Met Gly Thr Ala Ala Leu Gly Pro Val Trp Ala Ala Leu  
           20                  25                  30  
 Leu Leu Phe Leu Leu Met Cys Glu Ile Pro Met Val Glu Leu Thr Phe  
           35                  40                  45  
 Asp Arg Ala Val Ala Ser Gly Cys Gln Arg Cys Cys Asp Ser Glu Asp  
       50                  55                  60  
 Pro Leu Asp Pro Ala His Val Ser Ser Ala Ser Ser Ser Gly Arg Pro  
   65                  70                  75                  80  
 His Ala Leu Pro Glu Ile Arg Pro Tyr Ile Asn Ile Thr Ile Leu Lys  
           85                  90                  95  
 Gly Asp Lys Gly Asp Pro Gly Pro Met Gly Leu Pro Gly Tyr Met Gly  
           100                  105                  110  
 Arg Glu Gly Pro Gln Gly Glu Pro Gly Pro Gln Gly Ser Lys Gly Asp  
       115                  120                  125  
 Lys Gly Glu Met Gly Ser Pro Gly Ala Pro Cys Gln Lys Arg Phe Phe  
       130                  135                  140  
 Ala Phe Ser Val Gly Arg Lys Thr Ala Leu His Ser Gly Glu Asp Phe  
   145                  150                  155                  160  
 Gln Thr Leu Leu Phe Glu Arg Val Phe Val Asn Leu Asp Gly Cys Phe  
           165                  170                  175  
 Asp Met Ala Thr Gly Gln Phe Ala Ala Pro Leu Arg Gly Ile Tyr Phe  
       180                  185                  190  
 Phe Ser Leu Asn Val His Ser Trp Asn Tyr Lys Glu Thr Tyr Val His  
       195                  200                  205  
 Ile Met His Asn Gln Lys Glu Ala Val Ile Leu Tyr Ala Gln Pro Ser  
       210                  215                  220  
 Glu Arg Ser Ile Met Gln Ser Gln Ser Val Met Leu Asp Leu Ala Tyr  
   225                  230                  235                  240  
 Gly Asp Arg Val Trp Val Arg Leu Phe Lys Arg Gln Arg Glu Asn Ala  
           245                  250                  255  
 Ile Tyr Ser Asn Asp Phe Asp Thr Tyr Ile Thr Phe Ser Gly His Leu  
       260                  265                  270

Ile Lys Ala Glu Asp Asp  
275

<210> 44  
<211> 199  
<212> PRT  
<213> Homo sapiens

<400> 44  
Met Tyr Pro Ala Thr Ala Val Pro Gln Ile Asn Ile Thr Ile Leu Lys  
1 5 10 15  
Gly Glu Lys Gly Asp Arg Gly Asp Arg Gly Leu Gln Gly Lys Tyr Gly  
20 25 30  
Lys Thr Gly Ser Ala Gly Ala Arg Gly His Thr Gly Pro Lys Gly Gln  
35 40 45  
Lys Gly Ser Met Gly Ala Pro Gly Glu Arg Cys Lys Ser His Tyr Ala  
50 55 60  
Ala Phe Ser Val Gly Arg Lys Lys Pro Met His Ser Asn His Tyr Tyr  
65 70 75 80  
Gln Thr Val Ile Phe Asp Thr Glu Phe Val Asn Leu Tyr Asp His Phe  
85 90 95  
Asn Met Phe Thr Gly Lys Phe Tyr Cys Tyr Val Pro Gly Leu Tyr Phe  
100 105 110  
Phe Ser Leu Asn Val His Thr Trp Asn Gln Lys Glu Thr Tyr Leu His  
115 120 125  
Ile Met Lys Asn Glu Glu Glu Val Val Ile Leu Phe Ala Gln Val Gly  
130 135 140  
Asp Arg Ser Ile Met Gln Ser Gln Ser Leu Met Leu Glu Leu Arg Glu  
145 150 155 160  
Gln Asp Gln Val Trp Val Arg Leu Tyr Lys Gly Glu Arg Glu Asn Ala  
165 170 175  
Ile Phe Ser Glu Glu Leu Asp Thr Tyr Ile Thr Phe Ser Gly Tyr Leu  
180 185 190  
Val Lys His Ala Thr Glu Pro  
195

<210> 45  
<211> 688  
<212> PRT  
<213> Rattus norvegicus

<400> 45

Met Ala Asp Leu Glu Ala Val Leu Ala Asp Val Ser Tyr Leu Met Ala  
 1 5 10 15  
 Met Glu Lys Ser Lys Ala Thr Pro Ala Ala Arg Ala Ser Lys Lys Val  
 20 25 30  
 Val Leu Pro Glu Pro Ser Ile Arg Ser Val Met Gln Arg Tyr Leu Ala  
 35 40 45  
 Glu Arg Asn Glu Ile Thr Phe Asp Lys Ile Phe Asn Gln Lys Ile Gly  
 50 55 60  
 Phe Leu Leu Phe Lys Asp Phe Cys Leu Asn Glu Ile Gly Glu Ala Val  
 65 70 75 80  
 Pro Gln Val Lys Phe Tyr Glu Glu Ile Lys Glu Tyr Glu Lys Leu Asp  
 85 90 95  
 Asn Glu Glu Asp Arg Leu His Arg Ser Arg Gln Met Tyr Asp Ala Tyr  
 100 105 110  
 Ile Met Arg Glu Leu Leu Ser Ser Thr His Gln Phe Ser Lys Gln Ala  
 115 120 125  
 Val Glu His Val Gln Ser His Leu Ser Lys Lys Gln Val Thr Pro Thr  
 130 135 140  
 Leu Phe Gln Pro Tyr Ile Glu Glu Ile Cys Glu Ser Leu Arg Gly Asp  
 145 150 155 160  
 Ile Phe Gln Lys Phe Met Glu Ser Glu Lys Phe Thr Arg Phe Cys Gln  
 165 170 175  
 Trp Lys Asn Val Glu Leu Asn Ile His Leu Ser Met Asn Asp Phe Ser  
 180 185 190  
 Val His Arg Ile Ile Gly Arg Gly Gly Phe Gly Glu Val Tyr Gly Cys  
 195 200 205  
 Arg Lys Ala Asp Thr Gly Lys Met Tyr Ala Met Lys Cys Leu Asp Lys  
 210 215 220  
 Lys Arg Val Lys Met Lys Gln Gly Glu Thr Leu Ala Leu Asn Glu Arg  
 225 230 235 240  
 Ile Met Leu Ser Leu Val Ser Thr Gly Asp Cys Pro Phe Ile Val Cys  
 245 250 255  
 Met Thr Tyr Ala Phe His Thr Pro Asp Lys Leu Cys Phe Ile Leu Asp  
 260 265 270  
 Leu Met Asn Gly Gly Asp Met His Tyr His Leu Ser Gln His Gly Val  
 275 280 285  
 Phe Ser Glu Lys Glu Met Arg Phe Tyr Ala Ser Glu Ile Ile Leu Gly  
 290 295 300



Leu Glu His Met His Thr Cys Phe Val Val Tyr Arg Asp Leu Lys Pro  
 305 310 315 320  
 Ala Asn Ile Leu Leu Asp Glu Tyr Gly His Val Arg Ile Ser Asp Leu  
 325 330 335  
 Gly Leu Ala Cys Asp Phe Ser Lys Lys Lys Pro His Ala Ser Val Gly  
 340 345 350  
 Thr His Gly Tyr Met Ala Pro Glu Val Leu Gln Lys Gly Thr Cys Tyr  
 355 360 365  
 Asp Ser Ser Ala Asp Trp Phe Ser Leu Gly Cys Met Leu Phe Lys Leu  
 370 375 380  
 Leu Arg Gly His Ser Pro Phe Arg Gln His Lys Thr Lys Asp Lys His  
 385 390 395 400  
 Glu Ile Asp Arg Met Thr Leu Thr Val Asn Val Gln Leu Pro Asp Ala  
 405 410 415  
 Phe Ser Pro Glu Leu Arg Ser Leu Leu Glu Gly Leu Leu Gln Arg Asp  
 420 425 430  
 Val Ser Gln Arg Leu Gly Cys Tyr Gly Gly Gly Ala Arg Glu Leu Lys  
 435 440 445  
 Glu His Ile Phe Phe Lys Gly Ile Asp Trp Gln Tyr Val Tyr Leu Arg  
 450 455 460  
 Lys Tyr Pro Pro Pro Leu Ile Pro Pro Arg Gly Glu Val Asn Ala Ala  
 465 470 475 480  
 Asp Ala Phe Asp Ile Gly Ser Phe Asp Glu Glu Asp Thr Lys Gly Ile  
 485 490 495  
 Lys Leu Leu Asp Cys Asp Gln Asp Leu Tyr Lys Asn Phe Pro Leu Met  
 500 505 510  
 Ile Ser Glu Arg Trp Gln Gln Glu Val Val Glu Thr Ile Tyr Asp Ala  
 515 520 525  
 Val Asn Ala Glu Thr Asp Lys Ile Glu Ala Arg Lys Lys Ala Lys Asn  
 530 535 540  
 Lys Gln Leu Cys Gln Glu Glu Asp Tyr Ala Met Gly Lys Asp Cys Ile  
 545 550 555 560  
 Met His Gly Tyr Met Leu Lys Leu Gly Asn Pro Phe Leu Thr Gln Trp  
 565 570 575  
 Gln Arg Arg Tyr Phe Tyr Leu Phe Pro Asn Arg Leu Glu Trp Arg Gly  
 580 585 590  
 Glu Gly Glu Ser Arg Gln Asn Leu Leu Thr Met Glu Gln Ile Met Ser  
 595 600 605

Val Glu Glu Thr Gln Ile Lys Asp Arg Lys Cys Ile Leu Leu Arg Val  
 610 615 620  
 Lys Gly Gly Lys Gln Phe Val Leu Gln Cys Glu Ser Asp Pro Glu Phe  
 625 630 635 640  
 Ala Gln Trp Leu Lys Glu Leu Thr Cys Thr Phe Asn Glu Ala Gln Arg  
 645 650 655  
 Leu Leu Arg Arg Ala Pro Lys Phe Leu Asn Lys Pro Arg Ala Ala Ile  
 660 665 670  
 Leu Glu Phe Ser Lys Pro Pro Leu Cys His Arg Asn Ser Ser Gly Leu  
 675 680 685

<210> 46  
 <211> 689  
 <212> PRT  
 <213> Didelphis virginiana

<400> 46  
 Met Ala Asp Leu Glu Ala Val Leu Ala Asp Val Ser Tyr Leu Met Ala  
 1 5 10 15  
 Met Glu Lys Ser Lys Ala Thr Pro Ala Ala Arg Ala Ser Lys Lys Ile  
 20 25 30  
 Leu Leu Pro Glu Pro Ser Ile Arg Ser Val Met Gln Lys Tyr Leu Glu  
 35 40 45  
 Asp Arg Gly Glu Val Thr Phe Glu Lys Ile Phe Ser Gln Lys Leu Gly  
 50 55 60  
 Tyr Leu Leu Phe Arg Glu Phe Cys Leu Asn His Met Glu Glu Ala Lys  
 65 70 75 80  
 Pro Leu Val Glu Phe Tyr Asp Glu Ile Lys Lys Tyr Glu Lys Leu Asp  
 85 90 95  
 Ser Glu Glu Glu Arg Thr Val Lys Ser Arg Glu Ile Phe Asp Leu Tyr  
 100 105 110  
 Ile Met Lys Glu Leu Leu Ser Cys Ser His Leu Phe Ser Lys Ser Ala  
 115 120 125  
 Thr Glu His Val Gln Ser Arg Leu Leu Lys Lys Gln Val Pro Thr Asp  
 130 135 140  
 Leu Phe Gln Pro Tyr Ile Glu Glu Ile Cys Gln Arg Phe Arg Asp Asp  
 145 150 155 160  
 Val Phe Gln Lys Phe Ile Glu Ser Glu Lys Phe Thr Arg Phe Cys Gln  
 165 170 175

Trp	Lys	Asn	Val	Glu	Leu	Asn	Ile	His	Leu	Thr	Met	Asn	Asp	Phe	Ser	180	185	190
Val	His	Arg	Ile	Ile	Gly	Arg	Gly	Gly	Phe	Gly	Glu	Val	Tyr	Gly	Cys	195	200	205
Arg	Lys	Ala	Asp	Thr	Gly	Lys	Met	Tyr	Ala	Met	Lys	Cys	Leu	Asp	Lys	210	215	220
Lys	Arg	Ile	Lys	Met	Lys	Gln	Gly	Glu	Thr	Leu	Ala	Leu	Asn	Glu	Arg	225	230	235
Ile	Met	Leu	Ser	Leu	Val	Ser	Thr	Gly	Asp	Cys	Pro	Phe	Ile	Val	Cys	245	250	255
Met	Ser	Tyr	Ala	Phe	His	Thr	Pro	Asp	Lys	Leu	Ser	Phe	Ile	Leu	Asp	260	265	270
Leu	Met	Asn	Gly	Gly	Asp	Leu	His	Tyr	His	Leu	Ser	Gln	His	Gly	Val	275	280	285
Phe	Ser	Glu	Ser	Asp	Met	Arg	Phe	Tyr	Ala	Ala	Glu	Ile	Ile	Leu	Gly	290	295	300
Leu	Glu	His	Met	His	Ser	Arg	Phe	Val	Val	Tyr	Arg	Asp	Leu	Lys	Pro	305	310	315
Ala	Asn	Ile	Leu	Leu	Asp	Glu	Phe	Gly	His	Val	Arg	Ile	Ser	Asp	Leu	325	330	335
Gly	Leu	Ala	Cys	Asp	Phe	Ser	Lys	Lys	Lys	Pro	His	Ala	Ser	Val	Gly	340	345	350
Thr	His	Gly	Tyr	Met	Ala	Pro	Glu	Val	Leu	Gln	Lys	Gly	Val	Ala	Tyr	355	360	365
Asp	Ser	Ser	Ala	Asp	Trp	Phe	Ser	Leu	Gly	Cys	Met	Leu	Phe	Lys	Leu	370	375	380
Leu	Arg	Gly	His	Ser	Pro	Phe	Arg	Gln	His	Lys	Thr	Lys	Asp	Lys	His	385	390	395
Glu	Ile	Asp	Arg	Met	Thr	Leu	Thr	Met	Ala	Val	Glu	Leu	Pro	Asp	Ser	405	410	415
Phe	Ser	Pro	Glu	Leu	Arg	Ser	Leu	Leu	Glu	Gly	Leu	Leu	Gln	Arg	Asp	420	425	430
Val	Asn	Arg	Ser	Leu	Gly	Cys	Leu	Gly	Arg	Gly	Ala	Gln	Glu	Val	Lys	435	440	445
Glu	Asp	Pro	Phe	Phe	Lys	Ala	Val	Asp	Trp	Gln	Met	Val	Leu	Leu	Gln	450	455	460
Lys	Tyr	Pro	Pro	Pro	Leu	Ile	Pro	Pro	Arg	Gly	Glu	Val	Asn	Ala	Ala	465	470	475

Asp Ala Phe Asp Ile Gly Ser Phe Asp Glu Glu Asp Thr Lys Gly Ile  
 485 490 495  
 Lys Leu Leu Asp Ser Asp Gln Glu Leu Tyr Arg Asn Phe Pro Leu Thr  
 500 505 510  
 Ile Ser Glu Arg Trp Gln Gln Glu Val Ala Glu Thr Val Phe Asp Thr  
 515 520 525  
 Val Asn Ser Glu Thr Asp Arg Leu Glu Ala Arg Lys Lys Ala Lys Asn  
 530 535 540  
 Lys Gln Leu Gly His Glu Asp Asp Tyr Ala Leu Gly Lys Asp Cys Ile  
 545 550 555 560  
 Met His Gly Tyr Met Ser Lys Met Gly Asn Pro Phe Leu Thr Gln Trp  
 565 570 575  
 Gln Arg Arg Tyr Phe Tyr Leu Phe Pro Asn Arg Leu Glu Trp Arg Ala  
 580 585 590  
 Glu Gly Glu Ala Pro Gln Ser Leu Leu Thr Met Glu Glu Ile Gln Ser  
 595 600 605  
 Val Glu Glu Thr Gln Ile Lys Asp Arg Lys Cys Ile Leu Leu Lys Ile  
 610 615 620  
 Arg Gly Gly Lys Gln Phe Ile Leu Gln Cys Asp Ser Asp Pro Glu Leu  
 625 630 635 640  
 Val Gln Trp Lys Lys Glu Leu Arg Asp Val Tyr Arg Glu Ala Gln Gln  
 645 650 655  
 Leu Leu Gln Arg Val Pro Lys Met Lys Asn Lys Pro Arg Ser Pro Val  
 660 665 670  
 Val Glu Leu Ser Lys Met Pro Leu Thr Gln Arg Gly Ser Ala Asn Gly  
 675 680 685

Leu

<210> 47  
 <211> 689  
 <212> PRT  
 <213> Bos taurus

<400> 47  
 Met Ala Asp Leu Glu Ala Val Leu Ala Asp Val Ser Tyr Leu Met Ala  
 1 5 10 15  
 Met Glu Lys Ser Lys Ala Thr Pro Ala Ala Arg Ala Ser Lys Lys Ile  
 20 25 30  
 Leu Leu Pro Glu Pro Ser Ile Arg Ser Val Met Gln Lys Tyr Leu Glu

35					40					45					
Asp	Arg	Gly	Glu	Val	Thr	Phe	Glu	Lys	Ile	Phe	Ser	Gln	Lys	Leu	Gly
	50					55					60				
Tyr	Leu	Leu	Phe	Arg	Asp	Phe	Cys	Leu	Lys	His	Leu	Glu	Glu	Ala	Lys
65					70					75					80
Pro	Leu	Val	Glu	Phe	Tyr	Glu	Glu	Ile	Lys	Lys	Tyr	Glu	Lys	Leu	Glu
				85					90					95	
Thr	Glu	Glu	Glu	Arg	Leu	Val	Cys	Ser	Arg	Glu	Ile	Phe	Asp	Thr	Tyr
			100					105					110		
Ile	Met	Lys	Glu	Leu	Leu	Ala	Cys	Ser	His	Pro	Phe	Ser	Lys	Ser	Ala
		115					120					125			
Ile	Glu	His	Val	Gln	Gly	His	Leu	Val	Lys	Lys	Gln	Val	Pro	Pro	Asp
130						135					140				
Leu	Phe	Gln	Pro	Tyr	Ile	Glu	Glu	Ile	Cys	Gln	Asn	Leu	Arg	Gly	Asp
145					150					155					160
Val	Phe	Gln	Lys	Phe	Ile	Glu	Ser	Asp	Lys	Phe	Thr	Arg	Phe	Cys	Gln
				165					170					175	
Trp	Lys	Asn	Val	Glu	Leu	Asn	Ile	His	Leu	Thr	Met	Asn	Asp	Phe	Ser
			180					185					190		
Val	His	Arg	Ile	Ile	Gly	Arg	Gly	Gly	Phe	Gly	Glu	Val	Tyr	Gly	Cys
		195					200					205			
Arg	Lys	Ala	Asp	Thr	Gly	Lys	Met	Tyr	Ala	Met	Lys	Cys	Leu	Asp	Lys
	210					215					220				
Lys	Arg	Ile	Lys	Met	Lys	Gln	Gly	Glu	Thr	Leu	Ala	Leu	Asn	Glu	Arg
225					230					235					240
Ile	Met	Leu	Ser	Leu	Val	Ser	Thr	Gly	Asp	Cys	Pro	Phe	Ile	Val	Cys
				245					250					255	
Met	Ser	Tyr	Ala	Phe	His	Thr	Pro	Asp	Lys	Leu	Ser	Phe	Ile	Leu	Asp
			260					265					270		
Leu	Met	Asn	Gly	Gly	Asp	Leu	His	Tyr	His	Leu	Ser	Gln	His	Gly	Val
		275					280					285			
Phe	Ser	Glu	Ala	Asp	Met	Arg	Phe	Tyr	Ala	Ala	Glu	Ile	Ile	Leu	Gly
	290					295					300				
Leu	Glu	His	Met	His	Asn	Arg	Phe	Val	Val	Tyr	Arg	Asp	Leu	Lys	Pro
305					310					315					320
Ala	Asn	Ile	Leu	Leu	Asp	Glu	His	Gly	His	Val	Arg	Ile	Ser	Asp	Leu
				325					330					335	
Gly	Leu	Ala	Cys	Asp	Phe	Ser	Lys	Lys	Lys	Pro	His	Ala	Ser	Val	Gly

340							345				350							
Thr	His	Gly	Tyr	Met	Ala	Pro	Glu	Val	Leu	Gln	Lys	Gly	Val	Ala	Tyr			
		355					360					365						
Asp	Ser	Ser	Ala	Asp	Trp	Phe	Ser	Leu	Gly	Cys	Met	Leu	Phe	Lys	Leu			
	370					375					380							
Leu	Arg	Gly	His	Ser	Pro	Phe	Arg	Gln	His	Lys	Thr	Lys	Asp	Lys	His			
385					390					395					400			
Glu	Ile	Asp	Arg	Met	Thr	Leu	Thr	Met	Ala	Val	Glu	Leu	Pro	Asp	Ser			
				405					410					415				
Phe	Ser	Pro	Glu	Leu	Arg	Ser	Leu	Leu	Glu	Gly	Leu	Leu	Gln	Arg	Asp			
			420					425					430					
Val	Asn	Arg	Arg	Leu	Gly	Cys	Leu	Gly	Arg	Gly	Ala	Gln	Glu	Val	Lys			
	435						440					445						
Glu	Ser	Pro	Phe	Phe	Arg	Ser	Leu	Asp	Trp	Gln	Met	Val	Phe	Leu	Gln			
	450					455					460							
Lys	Tyr	Pro	Pro	Pro	Leu	Ile	Pro	Pro	Arg	Gly	Glu	Val	Asn	Ala	Ala			
465					470					475					480			
Asp	Ala	Phe	Asp	Ile	Gly	Ser	Phe	Asp	Glu	Glu	Asp	Thr	Lys	Gly	Ile			
				485					490					495				
Lys	Leu	Leu	Asp	Ser	Asp	Gln	Glu	Leu	Tyr	Arg	Asn	Phe	Pro	Leu	Thr			
			500					505					510					
Ile	Ser	Glu	Arg	Trp	Gln	Gln	Glu	Val	Ala	Glu	Thr	Val	Phe	Asp	Thr			
		515					520						525					
Ile	Asn	Ala	Glu	Thr	Asp	Arg	Leu	Glu	Ala	Arg	Lys	Lys	Thr	Lys	Asn			
	530					535					540							
Lys	Gln	Leu	Gly	His	Glu	Glu	Asp	Tyr	Ala	Leu	Gly	Lys	Asp	Cys	Ile			
545					550					555					560			
Met	His	Gly	Tyr	Met	Ser	Lys	Met	Gly	Asn	Pro	Phe	Leu	Thr	Gln	Trp			
				565					570					575				
Gln	Arg	Arg	Tyr	Phe	Tyr	Leu	Phe	Pro	Asn	Arg	Leu	Glu	Trp	Arg	Gly			
			580					585					590					
Glu	Gly	Glu	Ala	Pro	Gln	Ser	Leu	Leu	Thr	Met	Glu	Glu	Ile	Gln	Ser			
		595					600					605						
Val	Glu	Glu	Thr	Gln	Ile	Lys	Glu	Arg	Lys	Cys	Leu	Leu	Leu	Lys	Ile			
	610					615					620							
Arg	Gly	Gly	Lys	Gln	Phe	Val	Leu	Gln	Cys	Asp	Ser	Asp	Pro	Glu	Leu			
625					630					635					640			
Val	Gln	Trp	Lys	Lys	Glu	Leu	Arg	Asp	Ala	Tyr	Arg	Glu	Ala	Gln	Gln			



Arg Lys Ala Asp Thr Gly Lys Met Tyr Ala Met Lys Cys Leu Asp Lys  
 210 215 220  
 Lys Arg Ile Lys Met Lys Gln Gly Glu Thr Leu Ala Leu Asn Glu Arg  
 225 230 235 240  
 Ile Met Leu Ser Leu Val Ser Thr Gly Asp Cys Pro Phe Ile Val Cys  
 245 250 255  
 Met Thr Tyr Ala Phe His Thr Pro Asp Lys Leu Cys Phe Ile Leu Asp  
 260 265 270  
 Leu Met Asn Gly Gly Asp Leu His Tyr His Leu Ser Gln His Gly Val  
 275 280 285  
 Phe Ser Glu Lys Glu Met Arg Phe Tyr Ala Thr Glu Ile Ile Leu Gly  
 290 295 300  
 Leu Glu His Met His Asn Arg Phe Val Val Tyr Arg Asp Leu Lys Pro  
 305 310 315 320  
 Ala Asn Ile Leu Leu Asp Glu His Gly His Val Arg Ile Ser Asp Leu  
 325 330 335  
 Gly Leu Ala Cys Asp Phe Ser Lys Lys Lys Pro His Ala Ser Val Gly  
 340 345 350  
 Thr His Gly Tyr Met Ala Pro Glu Val Leu Gln Lys Gly Thr Ala Tyr  
 355 360 365  
 Asp Ser Ser Ala Asp Trp Phe Ser Leu Gly Cys Met Leu Phe Lys Leu  
 370 375 380  
 Leu Arg Gly His Ser Pro Phe Arg Gln His Lys Thr Lys Asp Lys His  
 385 390 395 400  
 Glu Ile Asp Arg Met Thr Leu Thr Met Asn Val Glu Leu Pro Asp Val  
 405 410 415  
 Phe Ser Pro Glu Leu Lys Ser Leu Leu Glu Gly Leu Leu Gln Arg Asp  
 420 425 430  
 Val Ser Lys Arg Leu Gly Cys His Gly Gly Ser Ala Gln Glu Leu Lys  
 435 440 445  
 Thr His Asp Phe Phe Arg Gly Ile Asp Trp Gln His Val Tyr Leu Gln  
 450 455 460  
 Lys Tyr Pro Pro Pro Leu Ile Pro Pro Arg Gly Glu Val Asn Ala Ala  
 465 470 475 480  
 Asp Ala Phe Asp Ile Gly Ser Phe Asp Glu Glu Asp Thr Lys Gly Ile  
 485 490 495  
 Lys Leu Leu Asp Cys Asp Gln Glu Leu Tyr Lys Asn Phe Pro Leu Val  
 500 505 510



Ile Ser Glu Arg Trp Gln Gln Glu Val Ala Glu Thr Val Tyr Glu Ala  
 515 520 525  
 Val Asn Ala Asp Thr Asp Lys Ile Glu Ala Arg Lys Arg Ala Lys Asn  
 530 535 540  
 Lys Gln Leu Gly His Glu Glu Asp Tyr Ala Leu Gly Arg Asp Cys Ile  
 545 550 555 560  
 Val His Gly Tyr Met Leu Lys Leu Gly Asn Pro Phe Leu Thr Gln Trp  
 565 570 575  
 Gln Arg Arg Tyr Phe Tyr Leu Phe Pro Asn Arg Leu Glu Trp Arg Gly  
 580 585 590  
 Glu Gly Glu Ser Arg Gln Ser Leu Leu Thr Met Glu Gln Ile Val Ser  
 595 600 605  
 Val Glu Glu Thr Gln Ile Lys Asp Lys Lys Cys Ile Leu Leu Arg Ile  
 610 615 620  
 Lys Gly Gly Lys Gln Phe Val Leu Gln Cys Glu Ser Asp Pro Glu Phe  
 625 630 635 640  
 Val Gln Trp Lys Lys Glu Leu Thr Glu Thr Phe Met Glu Ala Gln Arg  
 645 650 655  
 Leu Leu Arg Arg Ala Pro Lys Phe Leu Asn Lys Ser Arg Ser Ala Val  
 660 665 670  
 Val Glu Leu Ser Lys Pro Pro Leu Cys His Arg Asn Ser Asn Gly Leu  
 675 680 685

<210> 49  
 <211> 688  
 <212> PRT  
 <213> Homo sapiens

<400> 49  
 Met Ala Asp Leu Glu Ala Val Leu Ala Asp Val Ser Tyr Leu Met Ala  
 1 5 10 15  
 Met Glu Lys Ser Lys Ala Thr Pro Ala Ala Arg Ala Ser Lys Arg Ile  
 20 25 30  
 Val Leu Pro Glu Pro Ser Ile Arg Ser Val Met Gln Lys Tyr Leu Ala  
 35 40 45  
 Glu Arg Asn Glu Ile Thr Phe Asp Lys Ile Phe Asn Gln Lys Ile Gly  
 50 55 60  
 Phe Leu Leu Phe Lys Asp Phe Cys Leu Asn Glu Ile Asn Glu Ala Val  
 65 70 75 80

Pro Gln Val Lys Phe Tyr Glu Glu Ile Lys Glu Tyr Glu Lys Leu Asp  
 85 90 95  
 Asn Glu Glu Asp Arg Leu Cys Arg Ser Arg Gln Ile Tyr Asp Ala Tyr  
 100 105 110  
 Ile Met Lys Glu Leu Leu Ser Cys Ser His Pro Phe Ser Lys Gln Ala  
 115 120 125  
 Val Glu His Val Gln Ser His Leu Ser Lys Lys Gln Val Thr Ser Thr  
 130 135 140  
 Leu Phe Gln Pro Tyr Ile Glu Glu Ile Cys Glu Ser Leu Arg Gly Asp  
 145 150 155 160  
 Ile Phe Gln Lys Phe Met Glu Ser Asp Lys Phe Thr Arg Phe Cys Gln  
 165 170 175  
 Trp Lys Asn Val Glu Leu Asn Ile His Leu Thr Met Asn Glu Phe Ser  
 180 185 190  
 Val His Arg Ile Ile Gly Arg Gly Gly Phe Gly Glu Val Tyr Gly Cys  
 195 200 205  
 Arg Lys Ala Asp Thr Gly Lys Met Tyr Ala Met Lys Cys Leu Asp Lys  
 210 215 220  
 Lys Arg Ile Lys Met Lys Gln Gly Glu Thr Leu Ala Leu Asn Glu Arg  
 225 230 235 240  
 Ile Met Leu Ser Leu Val Ser Thr Gly Asp Cys Pro Phe Ile Val Cys  
 245 250 255  
 Met Thr Tyr Ala Phe His Thr Pro Asp Lys Leu Cys Phe Ile Leu Asp  
 260 265 270  
 Leu Met Asn Gly Gly Asp Leu His Tyr His Leu Ser Gln His Gly Val  
 275 280 285  
 Phe Ser Glu Lys Glu Met Arg Phe Tyr Ala Thr Glu Ile Ile Leu Gly  
 290 295 300  
 Leu Glu His Met His Asn Arg Phe Val Val Tyr Arg Asp Leu Lys Pro  
 305 310 315 320  
 Ala Asn Ile Leu Leu Asp Glu His Gly His Ala Arg Ile Ser Asp Leu  
 325 330 335  
 Gly Leu Ala Cys Asp Phe Ser Lys Lys Lys Pro His Ala Ser Val Gly  
 340 345 350  
 Thr His Gly Tyr Met Ala Pro Glu Val Leu Gln Lys Gly Thr Ala Tyr  
 355 360 365  
 Asp Ser Ser Ala Asp Trp Phe Ser Leu Gly Cys Met Leu Phe Lys Leu  
 370 375 380

Leu Arg Gly His Ser Pro Phe Arg Gln His Lys Thr Lys Asp Lys His  
 385 390 395 400  
 Glu Ile Asp Arg Met Thr Leu Thr Val Asn Val Glu Leu Pro Asp Thr  
 405 410 415  
 Phe Ser Pro Glu Leu Lys Ser Leu Leu Glu Gly Leu Leu Gln Arg Asp  
 420 425 430  
 Val Ser Lys Arg Leu Gly Cys His Gly Gly Gly Ser Gln Glu Val Lys  
 435 440 445  
 Glu His Ser Phe Phe Lys Gly Val Asp Trp Gln His Val Tyr Leu Gln  
 450 455 460  
 Lys Tyr Pro Pro Pro Leu Ile Pro Pro Arg Gly Glu Val Asn Ala Ala  
 465 470 475 480  
 Asp Ala Phe Asp Ile Gly Ser Phe Asp Glu Glu Asp Thr Lys Gly Ile  
 485 490 495  
 Lys Leu Leu Asp Cys Asp Gln Glu Leu Tyr Lys Asn Phe Pro Leu Val  
 500 505 510  
 Ile Ser Glu Arg Trp Gln Gln Glu Val Thr Glu Thr Val Tyr Glu Ala  
 515 520 525  
 Val Asn Ala Asp Thr Asp Lys Ile Glu Ala Arg Lys Arg Ala Lys Asn  
 530 535 540  
 Lys Gln Leu Gly His Glu Glu Asp Tyr Ala Leu Gly Lys Asp Cys Ile  
 545 550 555 560  
 Met His Gly Tyr Met Leu Lys Leu Gly Asn Pro Phe Leu Thr Gln Trp  
 565 570 575  
 Gln Arg Arg Tyr Phe Tyr Leu Phe Pro Asn Arg Leu Glu Trp Arg Gly  
 580 585 590  
 Glu Gly Glu Ser Arg Gln Asn Leu Leu Thr Met Glu Gln Ile Leu Ser  
 595 600 605  
 Val Glu Glu Thr Gln Ile Lys Asp Lys Lys Cys Ile Leu Phe Arg Ile  
 610 615 620  
 Lys Gly Gly Lys Gln Phe Val Leu Gln Cys Glu Ser Asp Pro Glu Phe  
 625 630 635 640  
 Val Gln Trp Lys Lys Glu Leu Asn Glu Thr Phe Lys Glu Ala Gln Arg  
 645 650 655  
 Leu Leu Arg Arg Ala Pro Lys Phe Leu Asn Lys Pro Arg Ser Gly Thr  
 660 665 670  
 Val Glu Leu Pro Lys Pro Ser Leu Cys His Arg Asn Ser Asn Gly Leu  
 675 680 685

<210> 50  
 <211> 730  
 <212> PRT  
 <213> Homo sapiens

<400> 50

Met	Leu	Lys	Thr	Ile	Asn	Leu	Gln	Asn	Glu	Gly	Phe	Thr	Cys	Thr	Ile
1				5					10					15	
Arg	Tyr	Arg	Gln	Ile	Gly	Pro	Leu	Ile	Asp	Arg	Gln	Ile	Phe	Arg	Phe
			20					25					30		
Thr	Glu	Glu	Gly	Met	Val	Asn	Ala	Arg	Phe	Asp	Tyr	Asn	Tyr	Asp	Asn
		35					40					45			
Ser	Phe	Arg	Val	Thr	Ser	Met	Gln	Ala	Val	Ile	Asn	Glu	Thr	Pro	Leu
	50					55					60				
Pro	Ile	Asp	Leu	Tyr	Arg	Tyr	Asp	Asp	Val	Ser	Gly	Lys	Thr	Glu	Gln
65					70					75					80
Phe	Gly	Lys	Phe	Gly	Val	Ile	Tyr	Tyr	Asp	Ile	Asn	Gln	Ile	Ile	Thr
				85					90					95	
Thr	Ala	Val	Met	Thr	His	Thr	Lys	His	Phe	Asp	Ala	Tyr	Gly	Arg	Met
			100					105					110		
Lys	Glu	Val	Gln	Tyr	Glu	Ile	Phe	Arg	Ser	Leu	Met	Tyr	Trp	Met	Thr
		115					120					125			
Val	Gln	Tyr	Asp	Asn	Met	Gly	Arg	Val	Val	Lys	Lys	Glu	Leu	Lys	Val
		130				135					140				
Gly	Pro	Tyr	Ala	Asn	Thr	Thr	Arg	Tyr	Ser	Tyr	Glu	Tyr	Asp	Ala	Asp
145					150					155					160
Gly	Gln	Leu	Gln	Thr	Val	Ser	Ile	Asn	Asp	Lys	Pro	Leu	Trp	Arg	Tyr
				165					170					175	
Ser	Tyr	Asp	Leu	Asn	Gly	Asn	Leu	His	Leu	Leu	Ser	Pro	Gly	Asn	Ser
			180					185					190		
Ala	Arg	Leu	Thr	Pro	Leu	Arg	Tyr	Asp	Ile	Arg	Asp	Arg	Ile	Thr	Arg
		195					200					205			
Leu	Gly	Asp	Val	Gln	Tyr	Lys	Met	Asp	Glu	Asp	Gly	Phe	Leu	Arg	Gln
	210					215					220				
Arg	Gly	Gly	Asp	Ile	Phe	Glu	Tyr	Asn	Ser	Ala	Gly	Leu	Leu	Ile	Lys
225					230					235					240
Ala	Tyr	Asn	Arg	Ala	Gly	Ser	Trp	Ser	Val	Arg	Tyr	Arg	Tyr	Asp	Gly



545                      550                      555                      560  
 His Ala His Tyr Leu Glu Asn Leu His Phe Thr Ile Asp Gly Val Asp  
                                  565                      570                      575  
 Thr His Tyr Phe Val Lys Pro Gly Pro Ser Glu Gly Asp Leu Ala Ile  
                                  580                      585                      590  
 Leu Gly Leu Ser Gly Gly Arg Arg Thr Leu Glu Asn Gly Val Asn Val  
                                  595                      600                      605  
 Thr Val Ser Gln Ile Asn Thr Val Leu Ser Gly Arg Thr Arg Arg Tyr  
                                  610                      615                      620  
 Thr Asp Ile Gln Leu Gln Tyr Gly Ala Leu Cys Leu Asn Thr Arg Tyr  
                                  625                      630                      635                      640  
 Gly Thr Thr Leu Asp Glu Glu Lys Ala Arg Val Leu Glu Leu Ala Arg  
                                  645                      650                      655  
 Gln Arg Ala Val Arg Gln Ala Trp Ala Arg Glu Gln Gln Arg Leu Arg  
                                  660                      665                      670  
 Glu Gly Glu Glu Gly Leu Arg Ala Trp Thr Glu Gly Glu Lys Gln Gln  
                                  675                      680                      685  
 Val Leu Ser Thr Gly Arg Val Gln Gly Tyr Asp Gly Phe Phe Val Ile  
                                  690                      695                      700  
 Ser Val Glu Gln Tyr Pro Glu Leu Ser Asp Ser Ala Asn Asn Ile His  
                                  705                      710                      715                      720  
 Phe Met Arg Gln Ser Glu Met Gly Arg Arg  
                                  725                      730

<210> 51  
 <211> 2715  
 <212> PRT  
 <213> Mus musculus

<400> 51  
 Met Asp Val Lys Glu Arg Arg Pro Tyr Cys Ser Leu Thr Lys Ser Arg  
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 Arg Glu Lys Glu Arg Arg Tyr Thr Asn Ser Ser Ala Asp Asn Glu Glu  
                                   20                                  25                                  30  
 Cys Arg Val Pro Thr Gln Lys Ser Tyr Ser Ser Ser Glu Thr Leu Lys  
                                   35                                  40                                  45  
 Ala Phe Asp His Asp Tyr Ser Arg Leu Leu Tyr Gly Asn Arg Val Lys  
                                   50                                  55                                  60  
 Asp Leu Val His Arg Glu Ala Asp Glu Tyr Thr Arg Gln Gly Gln Asn  
                                   65                                  70                                  75                                  80

Phe Thr Leu Arg Gln Leu Gly Val Cys Glu Ser Ala Thr Arg Arg Gly  
                     85                    90                    95

Val Ala Phe Cys Ala Glu Met Gly Leu Pro His Arg Gly Tyr Ser Ile  
                     100                    105                    110

Ser Ala Gly Ser Asp Ala Asp Thr Glu Asn Glu Ala Val Met Ser Pro  
                     115                    120                    125

Glu His Ala Met Arg Leu Trp Gly Arg Gly Val Lys Ser Gly Arg Ser  
                     130                    135                    140

Ser Cys Leu Ser Ser Arg Ser Asn Ser Ala Leu Thr Leu Thr Asp Thr  
 145                    150                    155                    160

Glu His Glu Asn Arg Ser Asp Ser Glu Ser Glu Gln Pro Ser Asn Asn  
                     165                    170                    175

Pro Gly Gln Pro Thr Leu Gln Pro Leu Pro Pro Ser His Lys Gln His  
                     180                    185                    190

Pro Ala Gln His His Pro Ser Ile Thr Ser Leu Asn Arg Asn Ser Leu  
                     195                    200                    205

Thr Asn Arg Arg Asn Gln Ser Pro Ala Pro Pro Ala Ala Leu Pro Ala  
 210                    215                    220

Glu Leu Gln Thr Thr Pro Glu Ser Val Gln Leu Gln Asp Ser Trp Val  
 225                    230                    235                    240

Leu Gly Ser Asn Val Pro Leu Glu Ser Arg His Phe Leu Phe Lys Thr  
                     245                    250                    255

Gly Thr Gly Thr Thr Pro Leu Phe Ser Thr Ala Thr Pro Gly Tyr Thr  
                     260                    265                    270

Met Ala Ser Gly Ser Val Tyr Ser Pro Pro Thr Arg Pro Leu Pro Arg  
                     275                    280                    285

Asn Thr Leu Ser Arg Ser Ala Phe Lys Phe Lys Lys Ser Ser Lys Tyr  
 290                    295                    300

Cys Ser Trp Arg Cys Thr Ala Leu Cys Ala Val Gly Val Ser Val Leu  
 305                    310                    315                    320

Leu Ala Ile Leu Leu Ser Tyr Phe Ile Ala Met His Leu Phe Gly Leu  
                     325                    330                    335

Asn Trp His Leu Gln Gln Thr Glu Asn Asp Thr Phe Glu Asn Gly Lys  
                     340                    345                    350

Val Asn Ser Asp Thr Val Pro Thr Asn Thr Val Ser Leu Pro Ser Gly  
                     355                    360                    365

Asp Asn Gly Lys Leu Gly Gly Phe Thr His Glu Asn Asn Thr Ile Asp  
 370                    375                    380

Ser Gly Glu Leu Asp Ile Gly Arg Arg Ala Ile Gln Glu Val Pro Pro  
 385 390 395 400  
 Gly Ile Phe Trp Arg Ser Gln Leu Phe Ile Asp Gln Pro Gln Phe Leu  
 405 410 415  
 Lys Phe Asn Ile Ser Leu Gln Lys Asp Ala Leu Ile Gly Val Tyr Gly  
 420 425 430  
 Arg Lys Gly Leu Pro Pro Ser His Thr Gln Tyr Asp Phe Val Glu Leu  
 435 440 445  
 Leu Asp Gly Ser Arg Leu Ile Ala Arg Glu Gln Arg Asn Leu Val Glu  
 450 455 460  
 Ser Glu Arg Ala Gly Arg Gln Ala Arg Ser Val Ser Leu His Glu Ala  
 465 470 475 480  
 Gly Phe Ile Gln Tyr Leu Asp Ser Gly Ile Trp His Leu Ala Phe Tyr  
 485 490 495  
 Asn Asp Gly Lys Asn Pro Glu Gln Val Ser Phe Asn Thr Ile Val Ile  
 500 505 510  
 Glu Ser Val Val Glu Cys Pro Arg Asn Cys His Gly Asn Gly Glu Cys  
 515 520 525  
 Val Ser Gly Thr Cys His Cys Phe Pro Gly Phe Leu Gly Pro Asp Cys  
 530 535 540  
 Ser Arg Ala Ala Cys Pro Val Leu Cys Ser Gly Asn Gly Gln Tyr Ser  
 545 550 555 560  
 Lys Gly Arg Cys Leu Cys Phe Ser Gly Trp Lys Gly Thr Glu Cys Asp  
 565 570 575  
 Val Pro Thr Thr Gln Cys Ile Asp Pro Gln Cys Gly Gly Arg Gly Ile  
 580 585 590  
 Cys Ile Met Gly Ser Cys Ala Cys Asn Ser Gly Tyr Lys Gly Glu Asn  
 595 600 605  
 Cys Glu Glu Ala Asp Cys Leu Asp Pro Gly Cys Ser Asn His Gly Val  
 610 615 620  
 Cys Ile His Gly Glu Cys His Cys Asn Pro Gly Trp Gly Gly Ser Asn  
 625 630 635 640  
 Cys Glu Ile Leu Lys Thr Met Cys Ala Asp Gln Cys Ser Gly His Gly  
 645 650 655  
 Thr Tyr Leu Gln Glu Ser Gly Ser Cys Thr Cys Asp Pro Asn Trp Thr  
 660 665 670  
 Gly Pro Asp Cys Ser Asn Glu Ile Cys Ser Val Asp Cys Gly Ser His  
 675 680 685



Gly	Val	Cys	Met	Gly	Gly	Ser	Cys	Arg	Cys	Glu	Glu	Gly	Trp	Thr	Gly		
690						695					700						
Pro	Ala	Cys	Asn	Gln	Arg	Ala	Cys	His	Pro	Arg	Cys	Ala	Glu	His	Gly		
705					710					715					720		
Thr	Cys	Lys	Asp	Gly	Lys	Cys	Glu	Cys	Ser	Gln	Gly	Trp	Asn	Gly	Glu		
				725					730					735			
His	Cys	Thr	Ile	Ala	His	Tyr	Leu	Asp	Lys	Ile	Val	Lys	Glu	Gly	Cys		
			740					745					750				
Pro	Gly	Leu	Cys	Asn	Ser	Asn	Gly	Arg	Cys	Thr	Leu	Asp	Gln	Asn	Gly		
		755					760					765					
Trp	His	Cys	Val	Cys	Gln	Pro	Gly	Trp	Arg	Gly	Ala	Gly	Cys	Asp	Val		
770						775					780						
Ala	Met	Glu	Thr	Leu	Cys	Thr	Asp	Ser	Lys	Asp	Asn	Glu	Gly	Asp	Gly		
785					790					795					800		
Leu	Ile	Asp	Cys	Met	Asp	Pro	Asp	Cys	Cys	Leu	Gln	Ser	Ser	Cys	Gln		
				805					810					815			
Asn	Gln	Pro	Tyr	Cys	Arg	Gly	Leu	Pro	Asp	Pro	Gln	Asp	Ile	Ile	Ser		
			820					825					830				
Gln	Ser	Leu	Gln	Thr	Pro	Ser	Gln	Gln	Ala	Ala	Lys	Ser	Phe	Tyr	Asp		
		835					840					845					
Arg	Ile	Ser	Phe	Leu	Ile	Gly	Ser	Asp	Ser	Thr	His	Val	Leu	Pro	Gly		
	850					855					860						
Glu	Ser	Pro	Phe	Asn	Lys	Ser	Leu	Ala	Ser	Val	Ile	Arg	Gly	Gln	Val		
865					870					875					880		
Leu	Thr	Ala	Asp	Gly	Thr	Pro	Leu	Ile	Gly	Val	Asn	Val	Ser	Phe	Leu		
				885					890					895			
His	Tyr	Ser	Glu	Tyr	Gly	Tyr	Thr	Ile	Thr	Arg	Gln	Asp	Gly	Met	Phe		
			900					905					910				
Asp	Leu	Val	Ala	Asn	Gly	Gly	Ala	Ser	Leu	Thr	Leu	Val	Phe	Glu	Arg		
		915					920					925					
Ser	Pro	Phe	Leu	Thr	Gln	Tyr	His	Thr	Val	Trp	Ile	Pro	Trp	Asn	Val		
						935					940						
Phe	Tyr	Val	Met	Asp	Thr	Leu	Val	Met	Lys	Lys	Glu	Glu	Asn	Asp	Ile		
945					950					955					960		
Pro	Ser	Cys	Asp	Leu	Ser	Gly	Phe	Val	Arg	Pro	Ser	Pro	Ile	Ile	Val		
				965					970					975			
Ser	Ser	Pro	Leu	Ser	Thr	Phe	Phe	Arg	Ser	Ser	Pro	Glu	Asp	Ser	Pro		
			980					985					990				

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 Ser Val Leu Lys Ile Thr Met Thr Gln Ala Val Ile Pro Phe Asn Leu  
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 1045 1050 1055  
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 1090 1095 1100  
 Lys Arg Thr Ala Val Leu Gln Gly Tyr Glu Leu Asp Ala Ser Asn Met  
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 Gly Gly Trp Thr Leu Asp Lys His His Val Leu Asp Val Gln Asn Gly  
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 Ile Leu Tyr Lys Gly Asn Gly Glu Asn Gln Phe Ile Ser Gln Gln Pro  
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 Pro Val Val Ser Ser Ile Met Gly Asn Gly Arg Arg Arg Ser Ile Ser  
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 Cys Pro Ser Cys Asn Gly Gln Ala Asp Gly Asn Lys Leu Leu Ala Pro  
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 Val Ala Leu Ala Cys Gly Ile Asp Gly Ser Leu Tyr Val Gly Asp Phe  
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Ala Thr Leu Met Ser Pro Lys Gly Met Ala Ile Asp Lys Asn Gly Leu  
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Ile Tyr Phe Val Asp Gly Thr Met Ile Arg Lys Val Asp Gln Asn Gly  
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Ile Ile Ser Thr Leu Leu Gly Ser Asn Asp Leu Thr Ser Ala Arg Pro  
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Leu Thr Cys Asp Thr Ser Met His Ile Ser Gln Val Arg Leu Glu Trp  
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Pro Thr Asp Leu Ala Ile Asn Pro Met Asp Asn Ser Ile Tyr Val Leu  
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Asp Asn Asn Val Val Leu Gln Ile Thr Glu Asn Arg Gln Val Arg Ile  
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Ala Ala Gly Arg Pro Met His Cys Gln Val Pro Gly Val Glu Tyr Pro  
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Val Gly Lys His Ala Val Gln Thr Thr Leu Glu Ser Ala Thr Ala Ile  
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Ala Val Ser Tyr Ser Gly Val Leu Tyr Ile Thr Glu Thr Asp Glu Lys  
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Lys Ile Asn Arg Ile Arg Gln Val Thr Thr Asp Gly Glu Ile Ser Leu  
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Val Ala Gly Ile Pro Ser Glu Cys Asp Cys Lys Asn Asp Ala Asn Cys  
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Asp Cys Tyr Gln Ser Gly Asp Gly Tyr Ala Lys Asp Ala Lys Leu Asn  
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Ala Pro Ser Ser Leu Ala Ala Ser Pro Asp Gly Thr Leu Tyr Ile Ala  
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Asp Leu Gly Asn Ile Arg Ile Arg Ala Val Ser Lys Asn Lys Pro Leu  
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Leu Asn Ser Met Asn Phe Tyr Glu Val Ala Ser Pro Thr Asp Gln Glu  
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Leu Tyr Ile Phe Asp Ile Asn Gly Thr His Gln Tyr Thr Val Ser Leu  
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Val Thr Gly Asp Tyr Leu Tyr Asn Phe Ser Tyr Ser Asn Asp Asn Asp  
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Val Thr Ala Val Thr Asp Ser Asn Gly Asn Thr Leu Arg Ile Arg Arg  
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 1860 1865 1870  
 Gly Lys Thr Trp Ser Tyr Thr Tyr Leu Glu Lys Ser Met Val Leu Leu  
 1875 1880 1885  
 Leu His Ser Gln Arg Gln Tyr Ile Phe Glu Tyr Asp Met Trp Asp Arg  
 1890 1895 1900

Leu Ser Ala Ile Thr Met Pro Ser Val Ala Arg His Thr Met Gln Thr  
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 1955 1960 1965  
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 Thr Tyr Asp Glu Thr Ala Gly Val Leu Lys Thr Val Asn Leu Gln Ser  
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 Ile Ser Gly Lys Val Glu Gln Phe Gly Lys Phe Gly Val Ile Tyr Tyr  
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 Ser Leu Gly Gln His Leu Gln Phe Phe Tyr Ala Asp Leu Thr Tyr Pro  
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 2275 2280 2285  
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 Tyr Gly Glu Ile Tyr Phe Asp Ser Asn Val Asp Phe Gln Leu Val Ile  
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 Gly Glu Arg Asp Tyr Asp Ile Leu Ala Gly Arg Trp Thr Thr Pro Asp  
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 Ile Glu Ile Trp Lys Arg Ile Gly Lys Asp Pro Ala Pro Phe Asn Leu  
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 Tyr Gly Met Thr Leu Asp Glu Glu Lys Ala Arg Ile Leu Glu Gln Ala  
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 Arg Asp Gly Glu Glu Gly Ala Arg Leu Trp Thr Glu Gly Glu Lys Arg  
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 Gln Leu Leu Ser Ala Gly Lys Val Gln Gly Tyr Asp Gly Tyr Tyr Val  
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 <211> 2725  
 <212> PRT  
 <213> Homo sapiens

<400> 52  
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 20 25 30  
 Gly Arg Lys Pro Arg Gln Ser Tyr Asn Ser Arg Glu Thr Leu His Glu  
 35 40 45  
 Tyr Asn Gln Glu Leu Arg Met Asn Tyr Asn Ser Gln Ser Arg Lys Arg  
 50 55 60

Lys Glu Val Glu Lys Ser Thr Gln Glu Met Glu Phe Cys Glu Thr Ser  
 65 70 75 80  
 His Thr Leu Cys Ser Gly Tyr Gln Thr Asp Met His Ser Val Ser Arg  
 85 90 95  
 His Gly Tyr Gln Leu Glu Met Gly Ser Asp Val Asp Thr Glu Thr Glu  
 100 105 110  
 Gly Ala Ala Ser Pro Asp His Ala Leu Arg Met Trp Ile Arg Gly Met  
 115 120 125  
 Lys Ser Glu His Ser Ser Cys Leu Ser Ser Arg Ala Asn Ser Ala Leu  
 130 135 140  
 Ser Leu Thr Asp Thr Asp His Glu Arg Lys Ser Asp Gly Glu Asn Gly  
 145 150 155 160  
 Phe Lys Phe Ser Pro Val Cys Cys Asp Met Glu Ala Gln Ala Gly Ser  
 165 170 175  
 Thr Gln Asp Val Gln Ser Ser Pro His Asn Gln Phe Thr Phe Arg Pro  
 180 185 190  
 Leu Pro Pro Pro Pro Pro Pro Pro His Ala Cys Thr Cys Ala Arg Lys  
 195 200 205  
 Pro Pro Pro Ala Ala Asp Ser Leu Gln Arg Arg Ser Met Thr Thr Arg  
 210 215 220  
 Ser Gln Pro Ser Pro Ala Ala Pro Ala Pro Pro Thr Ser Thr Gln Asp  
 225 230 235 240  
 Ser Val His Leu His Asn Ser Trp Val Leu Asn Ser Asn Ile Pro Leu  
 245 250 255  
 Glu Thr Arg His Phe Leu Phe Lys His Gly Ser Gly Ser Ser Ala Ile  
 260 265 270  
 Phe Ser Ala Ala Ser Gln Asn Tyr Pro Leu Thr Ser Asn Thr Val Tyr  
 275 280 285  
 Ser Pro Pro Pro Arg Pro Leu Pro Arg Ser Thr Phe Ser Arg Pro Ala  
 290 295 300  
 Phe Thr Phe Asn Lys Pro Tyr Arg Cys Cys Asn Trp Lys Cys Thr Ala  
 305 310 315 320  
 Leu Ser Ala Thr Ala Ile Thr Val Thr Leu Ala Leu Leu Leu Ala Tyr  
 325 330 335  
 Val Ile Ala Val His Leu Phe Gly Leu Thr Trp Gln Leu Gln Pro Val  
 340 345 350  
 Glu Gly Glu Leu Tyr Ala Asn Gly Val Ser Lys Gly Asn Arg Gly Thr  
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Glu	Ser	Met	Asp	Thr	Thr	Tyr	Ser	Pro	Ile	Gly	Gly	Lys	Val	Ser	Asp	
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Lys	Ser	Glu	Lys	Lys	Val	Phe	Gln	Lys	Gly	Arg	Ala	Ile	Asp	Thr	Gly	
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Glu	Val	Asp	Ile	Gly	Ala	Gln	Val	Met	Gln	Thr	Ile	Pro	Pro	Gly	Leu	
				405					410					415		
Phe	Trp	Arg	Phe	Gln	Ile	Thr	Ile	His	His	Pro	Ile	Tyr	Leu	Lys	Phe	
			420					425					430			
Asn	Ile	Ser	Leu	Ala	Lys	Asp	Ser	Leu	Leu	Gly	Ile	Tyr	Gly	Arg	Arg	
		435					440					445				
Asn	Ile	Pro	Pro	Thr	His	Thr	Gln	Phe	Asp	Phe	Val	Lys	Leu	Met	Asp	
450						455					460					
Gly	Lys	Gln	Leu	Val	Lys	Gln	Asp	Ser	Lys	Gly	Ser	Asp	Asp	Thr	Gln	
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His	Ser	Pro	Arg	Asn	Leu	Ile	Leu	Thr	Ser	Leu	Gln	Glu	Thr	Gly	Phe	
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Ile	Glu	Tyr	Met	Asp	Gln	Gly	Pro	Trp	Tyr	Leu	Ala	Phe	Tyr	Asn	Asp	
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Gly	Lys	Lys	Met	Glu	Gln	Val	Phe	Val	Leu	Thr	Thr	Ala	Ile	Glu	Ile	
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Met	Asp	Asp	Cys	Ser	Thr	Asn	Cys	Asn	Gly	Asn	Gly	Glu	Cys	Ile	Ser	
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Gly	His	Cys	His	Cys	Phe	Pro	Gly	Phe	Leu	Gly	Pro	Asp	Cys	Ala	Arg	
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Asp	Ser	Cys	Pro	Val	Leu	Cys	Gly	Gly	Asn	Gly	Glu	Tyr	Glu	Lys	Gly	
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His	Cys	Val	Cys	Arg	His	Gly	Trp	Lys	Gly	Pro	Glu	Cys	Asp	Val	Pro	
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Glu	Glu	Gln	Cys	Ile	Asp	Pro	Thr	Cys	Phe	Gly	His	Gly	Thr	Cys	Ile	
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Met	Gly	Val	Cys	Ile	Cys	Val	Pro	Gly	Tyr	Lys	Gly	Glu	Ile	Cys	Glu	
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Glu	Glu	Asp	Cys	Leu	Asp	Pro	Met	Cys	Ser	Asn	His	Gly	Ile	Cys	Val	
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Lys	Gly	Glu	Cys	His	Cys	Ser	Thr	Gly	Trp	Gly	Gly	Val	Asn	Cys	Glu	
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Thr	Pro	Leu	Pro	Val	Cys	Gln	Glu	Gln	Cys	Ser	Gly	His	Gly	Thr	Phe	
			660					665					670			

Leu Leu Asp Ala Gly Val Cys Ser Cys Asp Pro Lys Trp Thr Gly Ser  
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 Asp Cys Ser Thr Glu Leu Cys Thr Met Glu Cys Gly Ser His Gly Val  
 690 695 700  
 Cys Ser Arg Gly Ile Cys Gln Cys Glu Glu Gly Trp Val Gly Pro Thr  
 705 710 715 720  
 Cys Glu Glu Arg Ser Cys His Ser His Cys Thr Glu His Gly Gln Cys  
 725 730 735  
 Lys Asp Gly Lys Cys Glu Cys Ser Pro Gly Trp Glu Gly Asp His Cys  
 740 745 750  
 Thr Ile Ala His Tyr Leu Asp Ala Val Arg Asp Gly Cys Pro Gly Leu  
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 Cys Phe Gly Asn Gly Arg Cys Thr Leu Asp Gln Asn Gly Trp His Cys  
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 Val Cys Gln Val Gly Trp Ser Gly Thr Gly Cys Asn Val Val Met Glu  
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 Met Leu Cys Gly Asp Asn Leu Asp Asn Asp Gly Asp Gly Leu Thr Asp  
 805 810 815  
 Cys Val Asp Pro Asp Cys Cys Gln Gln Ser Asn Cys Tyr Ile Ser Pro  
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 Leu Cys Gln Gly Ser Pro Asp Pro Leu Asp Leu Ile Gln Gln Ser Gln  
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 Thr Leu Phe Ser Gln His Thr Ser Arg Leu Phe Tyr Asp Arg Ile Lys  
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 Phe Leu Ile Gly Lys Asp Ser Thr His Val Ile Pro Pro Glu Val Ser  
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 Phe Asp Ser Arg Arg Ala Cys Val Ile Arg Gly Gln Val Val Ala Ile  
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 Asp Tyr Gly Phe Thr Ile Ser Arg Gln Asp Gly Ser Phe Asp Leu Val  
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Asp Ile Ser Asn Phe Ile Ser Pro Asn Pro Ile Val Leu Pro Ser Pro  
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 His Leu Thr Val Ala Val Glu Gly Arg Leu Thr Gln Lys Trp Phe Pro  
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 Tyr Gly Gln Lys Val Trp Gly Leu Ala Glu Ala Leu Val Ser Val Gly  
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Asn Ser Val His Ile Arg Arg Asp Ala Gly Gly Met Pro Leu Trp Leu  
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 Val Val Pro Gly Gly Gln Val Tyr Trp Leu Thr Ile Ser Ser Asn Gly  
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 Lys Ile Tyr Asp Asp His Arg Lys Phe Thr Leu Arg Ile Leu Tyr Asp  
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 Val Asn Ile Thr Tyr Ser Pro Ser Gly Leu Val Thr Phe Ile Gln Arg  
 1845 1850 1855  
 Gly Thr Trp Asn Glu Lys Met Glu Tyr Asp Gln Ser Gly Lys Ile Ile  
 1860 1865 1870  
 Ser Arg Thr Trp Ala Asp Gly Lys Ile Trp Ser Tyr Thr Tyr Leu Glu  
 1875 1880 1885

Lys Ser Val Met Leu Leu Leu His Ser Gln Arg Arg Tyr Ile Phe Glu  
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 Tyr Asp Gln Pro Asp Cys Leu Leu Ser Val Thr Met Pro Ser Met Val  
 1905 1910 1915 1920  
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 1925 1930 1935  
 Tyr Thr Pro Pro Asp Ser Ser Thr Ser Phe Ile Gln Asp Tyr Ser Arg  
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 Asp Gly Arg Leu Leu Gln Thr Leu His Leu Gly Thr Gly Arg Arg Val  
 1955 1960 1965  
 Leu Tyr Lys Tyr Thr Lys Gln Ala Arg Leu Ser Glu Val Leu Tyr Asp  
 1970 1975 1980  
 Thr Thr Gln Val Thr Leu Thr Tyr Glu Glu Ser Ser Gly Val Ile Lys  
 1985 1990 1995 2000  
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 Lys His Thr Lys Ile Phe Ser Ala Asn Gly Gln Val Ile Glu Val Gln  
 2100 2105 2110  
 Tyr Glu Ile Leu Lys Ala Ile Ala Tyr Trp Met Thr Ile Gln Tyr Asp  
 2115 2120 2125  
 Asn Val Gly Arg Met Val Ile Cys Asp Ile Arg Val Gly Val Asp Ala  
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 Asn Ile Thr Arg Tyr Phe Tyr Glu Tyr Asp Ala Asp Gly Gln Leu Gln  
 2145 2150 2155 2160  
 Thr Val Ser Val Asn Asp Lys Thr Gln Trp Arg Tyr Ser Tyr Asp Leu  
 2165 2170 2175  
 Asn Gly Asn Ile Asn Leu Leu Ser His Gly Lys Ser Ala Arg Leu Thr  
 2180 2185 2190

Pro Leu Arg Tyr Asp Leu Arg Asp Arg Ile Thr Arg Leu Gly Glu Ile  
 2195 2200 2205

Gln Tyr Lys Met Asp Glu Asp Gly Phe Leu Arg Gln Arg Gly Asn Asp  
 2210 2215 2220

Ile Phe Glu Tyr Asn Ser Asn Gly Leu Leu Gln Lys Ala Tyr Asn Lys  
 2225 2230 2235 2240

Ala Ser Gly Trp Thr Val Gln Tyr Tyr Tyr Asp Gly Leu Gly Arg Arg  
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Val Ala Ser Lys Ser Ser Leu Gly Gln His Leu Gln Phe Phe Tyr Ala  
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Asp Leu Thr Asn Pro Ile Arg Val Thr His Leu Tyr Asn His Thr Ser  
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Ser Glu Ile Thr Ser Leu Tyr Tyr Asp Leu Gln Gly His Leu Ile Ala  
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Met Glu Leu Ser Ser Gly Glu Glu Tyr Tyr Val Ala Cys Asp Asn Thr  
 2305 2310 2315 2320

Gly Thr Pro Leu Ala Val Phe Ser Ser Arg Gly Gln Val Ile Lys Glu  
 2325 2330 2335

Ile Leu Tyr Thr Pro Tyr Gly Asp Ile Tyr His Asp Thr Tyr Pro Asp  
 2340 2345 2350

Phe Gln Val Ile Ile Gly Phe His Gly Gly Leu Tyr Asp Phe Leu Thr  
 2355 2360 2365

Lys Leu Val His Leu Gly Gln Arg Asp Tyr Asp Val Val Ala Gly Arg  
 2370 2375 2380

Trp Thr Thr Pro Asn His His Ile Trp Lys Gln Leu Asn Leu Leu Pro  
 2385 2390 2395 2400

Lys Pro Phe Asn Leu Tyr Ser Phe Glu Asn Asn Tyr Pro Val Gly Lys  
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Ile Gln Asp Val Ala Lys Tyr Thr Thr Asp Ile Arg Ser Trp Leu Glu  
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Leu Phe Gly Phe Gln Leu His Asn Val Leu Pro Gly Phe Pro Lys Pro  
 2435 2440 2445

Glu Leu Glu Asn Leu Glu Leu Thr Tyr Glu Leu Leu Arg Leu Gln Thr  
 2450 2455 2460

Lys Thr Gln Glu Trp Asp Pro Gly Lys Thr Ile Leu Gly Ile Gln Cys  
 2465 2470 2475 2480

Glu Leu Gln Lys Gln Leu Arg Asn Phe Ile Ser Leu Asp Gln Leu Pro  
 2485 2490 2495

Met Thr Pro Arg Tyr Asn Asp Gly Arg Cys Leu Glu Gly Gly Lys Gln  
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 Pro Arg Phe Ala Ala Val Pro Ser Val Phe Gly Lys Gly Ile Lys Phe  
                   2515                                  2520                                  2525  
  
 Ala Ile Lys Asp Gly Ile Val Thr Ala Asp Ile Ile Gly Val Ala Asn  
                   2530                                  2535                                  2540  
  
 Glu Asp Ser Arg Arg Leu Ala Ala Ile Leu Asn Asn Ala His Tyr Leu  
 2545                                  2550                                  2555                                  2560  
  
 Glu Asn Leu His Phe Thr Ile Glu Gly Arg Asp Thr His Tyr Phe Ile  
                                   2565                                  2570                                  2575  
  
 Lys Leu Gly Ser Leu Glu Glu Asp Leu Val Leu Ile Gly Asn Thr Gly  
                   2580                                  2585                                  2590  
  
 Gly Arg Arg Ile Leu Glu Asn Gly Val Asn Val Thr Val Ser Gln Met  
                   2595                                  2600                                  2605  
  
 Thr Ser Val Leu Asn Gly Arg Thr Arg Arg Phe Ala Asp Ile Gln Leu  
                   2610                                  2615                                  2620  
  
 Gln His Gly Ala Leu Cys Phe Asn Ile Arg Tyr Gly Thr Thr Val Glu  
 2625                                  2630                                  2635                                  2640  
  
 Glu Glu Lys Asn His Val Leu Glu Ile Ala Arg Gln Arg Ala Val Ala  
                                   2645                                  2650                                  2655  
  
 Gln Ala Trp Thr Lys Glu Gln Arg Arg Leu Gln Glu Gly Glu Glu Gly  
                   2660                                  2665                                  2670  
  
 Ile Arg Ala Trp Thr Glu Gly Glu Lys Gln Gln Leu Leu Ser Thr Gly  
                   2675                                  2680                                  2685  
  
 Arg Val Gln Gly Tyr Asp Gly Tyr Phe Val Leu Ser Val Glu Gln Tyr  
                   2690                                  2695                                  2700  
  
 Leu Glu Leu Ser Asp Ser Ala Asn Asn Ile His Phe Met Arg Gln Ser  
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 Glu Ile Gly Arg Arg  
                   2725

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 Gly Ile Gly Ser Ile Ser Val Leu Phe Ala Phe Val Val Met Leu Ile



20					25					30					
Leu	Leu	Thr	Thr	Thr	Gly	Val	Ile	Lys	Trp	Asn	Gln	Ser	Pro	Pro	Cys
		35					40					45			
Ser	Val	Leu	Val	Gly	Asn	Glu	Ala	Ser	Glu	Val	Thr	Ala	Ala	Lys	Ser
	50					55					60				
Thr	Asn	Thr	Asp	Leu	Ser	Lys	Leu	His	Asn	Ser	Ser	Val	Arg	Ala	Lys
	65					70				75					80
Asn	Gly	Gln	Gly	Ile	Gly	Leu	Ala	Gln	Gly	Gln	Ser	Gly	Leu	Gly	Ala
				85					90					95	
Ala	Gly	Val	Gly	Ser	Gly	Gly	Gly	Ser	Ser	Ala	Ala	Thr	Val	Thr	Thr
			100					105					110		
Ala	Thr	Ser	Asn	Ser	Gly	Thr	Ala	Gln	Gly	Leu	Gln	Ser	Thr	Ser	Ala
		115					120					125			
Ser	Ala	Glu	Ala	Thr	Ser	Ser	Ala	Ala	Thr	Ser	Ser	Ser	Gln	Ser	Ser
	130						135				140				
Leu	Thr	Pro	Ser	Leu	Ser	Ser	Ser	Leu	Ala	Asn	Ala	Asn	Asn	Gly	Gly
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Ala	Arg	Thr	Phe	Pro	Ala	Arg	Ser	Phe	Pro	Pro	Asp	Gly	Thr	Thr	Phe
				165					170					175	
Gly	Gln	Ile	Thr	Leu	Gly	Gln	Lys	Leu	Thr	Lys	Glu	Ile	Gln	Pro	Tyr
			180					185					190		
Ser	Tyr	Trp	Asn	Met	Gln	Phe	Tyr	Gln	Ser	Glu	Pro	Ala	Tyr	Val	Lys
		195					200					205			
Phe	Asp	Tyr	Thr	Ile	Pro	Arg	Gly	Ala	Ser	Ile	Gly	Val	Tyr	Gly	Arg
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Arg	Asn	Ala	Leu	Pro	Thr	His	Thr	Gln	Tyr	His	Phe	Lys	Glu	Val	Leu
	225				230					235					240
Ser	Gly	Phe	Ser	Ala	Ser	Thr	Arg	Thr	Ala	Arg	Ala	Ala	His	Leu	Ser
				245					250					255	
Ile	Thr	Arg	Glu	Val	Thr	Arg	Tyr	Met	Glu	Pro	Gly	His	Trp	Phe	Val
			260					265					270		
Ser	Leu	Tyr	Asn	Asp	Asp	Gly	Asp	Val	Gln	Glu	Leu	Thr	Phe	Tyr	Ala
		275					280					285			
Ala	Val	Ala	Glu	Asp	Met	Thr	Gln	Asn	Cys	Pro	Asn	Gly	Cys	Ser	Gly
		290				295					300				
Asn	Gly	Gln	Cys	Leu	Leu	Gly	His	Cys	Gln	Cys	Asn	Pro	Gly	Phe	Gly
	305				310					315					320
Gly	Asp	Asp	Cys	Ser	Glu	Ser	Val	Cys	Pro	Val	Leu	Cys	Ser	Gln	His

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Gly	Glu	Tyr	Thr	Asn	Gly	Glu	Cys	Ile	Cys	Asn	Pro	Gly	Trp	Lys	Gly				
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Lys	Glu	Cys	Ser	Leu	Arg	His	Asp	Glu	Cys	Glu	Val	Ala	Asp	Cys	Ser				
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Gly	His	Gly	His	Cys	Val	Ser	Gly	Lys	Cys	Gln	Cys	Met	Arg	Gly	Tyr				
	370					375						380							
Lys	Gly	Lys	Phe	Cys	Glu	Glu	Val	Asp	Cys	Pro	His	Pro	Asn	Cys	Ser				
385					390					395					400				
Gly	His	Gly	Phe	Cys	Ala	Asp	Gly	Thr	Cys	Ile	Cys	Lys	Lys	Gly	Trp				
			405						410					415					
Lys	Gly	Pro	Asp	Cys	Ala	Thr	Met	Asp	Gln	Asp	Ala	Leu	Gln	Cys	Leu				
			420					425					430						
Pro	Asp	Cys	Ser	Gly	His	Gly	Thr	Phe	Asp	Leu	Asp	Thr	Gln	Thr	Cys				
		435					440					445							
Thr	Cys	Glu	Ala	Lys	Trp	Ser	Gly	Asp	Asp	Cys	Ser	Lys	Glu	Leu	Cys				
	450					455					460								
Asp	Leu	Asp	Cys	Gly	Gln	His	Gly	Arg	Cys	Glu	Gly	Asp	Ala	Cys	Ala				
465					470					475					480				
Cys	Asp	Pro	Glu	Trp	Gly	Gly	Glu	Tyr	Cys	Asn	Thr	Arg	Leu	Cys	Asp				
				485					490					495					
Val	Arg	Cys	Asn	Glu	His	Gly	Gln	Cys	Lys	Asn	Gly	Thr	Cys	Leu	Cys				
			500					505					510						
Val	Thr	Gly	Trp	Asn	Gly	Lys	His	Cys	Thr	Ile	Glu	Gly	Cys	Pro	Asn				
		515					520					525							
Ser	Cys	Ala	Gly	His	Gly	Gln	Cys	Arg	Val	Ser	Gly	Glu	Gly	Gln	Trp				
	530					535					540								
Glu	Cys	Arg	Cys	Tyr	Glu	Gly	Trp	Asp	Gly	Pro	Asp	Cys	Gly	Ile	Ala				
545					550					555					560				
Leu	Glu	Leu	Asn	Cys	Gly	Asp	Ser	Lys	Asp	Asn	Asp	Lys	Asp	Gly	Leu				
			565					570						575					
Val	Asp	Cys	Glu	Asp	Pro	Glu	Cys	Cys	Ala	Ser	His	Val	Cys	Lys	Thr				
			580					585					590						
Ser	Gln	Leu	Cys	Val	Ser	Ala	Pro	Lys	Pro	Ile	Asp	Val	Leu	Leu	Arg				
		595					600					605							
Lys	Gln	Pro	Pro	Ala	Ile	Thr	Ala	Ser	Phe	Phe	Glu	Arg	Met	Lys	Phe				
	610					615					620								
Leu	Ile	Asp	Glu	Ser	Ser	Leu	Gln	Asn	Tyr	Ala	Lys	Leu	Glu	Thr	Phe				

625		630		635		640
Asn Glu Ser Arg Ser	Ala Val Ile Arg	Gly Arg Val Val Thr Ser Leu				
	645		650		655	
Gly Met Gly Leu Val Gly Val Arg Val Ser Thr Thr Thr Leu Leu Glu						
	660		665		670	
Gly Phe Thr Leu Thr Arg Asp Asp Gly Trp Phe Asp Leu Met Val Asn						
	675		680		685	
Gly Gly Gly Ala Val Thr Leu Gln Phe Gly Arg Ala Pro Phe Arg Pro						
	690		695		700	
Gln Ser Arg Ile Val Gln Val Pro Trp Asn Glu Val Val Ile Ile Asp						
705		710		715		720
Leu Val Val Met Ser Met Ser Glu Glu Lys Gly Leu Ala Val Thr Thr						
	725		730		735	
Thr His Thr Cys Phe Ala His Asp Tyr Asp Leu Met Lys Pro Val Val						
	740		745		750	
Leu Ala Ser Trp Lys His Gly Phe Gln Gly Ala Cys Pro Asp Arg Ser						
	755		760		765	
Ala Ile Leu Ala Glu Ser Gln Val Ile Gln Glu Ser Leu Gln Ile Pro						
	770		775		780	
Gly Thr Gly Leu Asn Leu Val Tyr His Ser Ser Arg Ala Ala Gly Tyr						
785		790		795		800
Leu Ser Thr Ile Lys Leu Gln Leu Thr Pro Asp Val Ile Pro Thr Ser						
	805		810		815	
Leu His Leu Ile His Leu Arg Ile Thr Ile Glu Gly Ile Leu Phe Glu						
	820		825		830	
Arg Ile Phe Glu Ala Asp Pro Gly Ile Lys Phe Thr Tyr Ala Trp Asn						
	835		840		845	
Arg Leu Asn Ile Tyr Arg Gln Arg Val Tyr Gly Val Thr Thr Ala Val						
	850		855		860	
Val Lys Val Gly Tyr Gln Tyr Thr Asp Cys Thr Asp Ile Val Trp Asp						
865		870		875		880
Ile Gln Thr Thr Lys Leu Ser Gly His Asp Met Ser Ile Ser Glu Val						
	885		890		895	
Gly Gly Trp Asn Leu Asp Ile His His Arg Tyr Asn Phe His Glu Gly						
	900		905		910	
Ile Leu Gln Lys Gly Asp Gly Ser Asn Ile Tyr Leu Arg Asn Lys Pro						
	915		920		925	
Arg Ile Ile Leu Thr Thr Met Gly Asp Gly His Gln Arg Pro Leu Glu						

930	935	940
Cys Pro Asp Cys Asp Gly Gln Ala Thr Lys Gln Arg Leu Leu Ala Pro 945 950 955 960		
Val Ala Leu Ala Ala Ala Pro Asp Gly Ser Leu Phe Val Gly Asp Phe 965 970 975		
Asn Tyr Ile Arg Arg Ile Met Thr Asp Gly Ser Ile Arg Thr Val Val 980 985 990		
Lys Leu Asn Ala Thr Arg Val Ser Tyr Arg Tyr His Met Ala Leu Ser 995 1000 1005		
Pro Leu Asp Gly Thr Leu Tyr Val Ser Asp Pro Glu Ser His Gln Ile 1010 1015 1020		
Ile Arg Val Arg Asp Thr Asn Asp Tyr Ser Gln Pro Glu Leu Asn Trp 1025 1030 1035 1040		
Glu Ala Val Val Gly Ser Gly Glu Arg Cys Leu Pro Gly Asp Glu Ala 1045 1050 1055		
His Cys Gly Asp Gly Ala Leu Ala Lys Asp Ala Lys Leu Ala Tyr Pro 1060 1065 1070		
Lys Gly Ile Ala Ile Ser Ser Asp Asn Ile Leu Tyr Phe Ala Asp Gly 1075 1080 1085		
Thr Asn Ile Arg Met Val Asp Arg Asp Gly Ile Val Ser Thr Leu Ile 1090 1095 1100		
Gly Asn His Met His Lys Ser His Trp Lys Pro Ile Pro Cys Glu Gly 1105 1110 1115 1120		
Thr Leu Lys Leu Glu Glu Met His Leu Arg Trp Pro Thr Glu Leu Ala 1125 1130 1135		
Val Ser Pro Met Asp Asn Thr Leu His Ile Ile Asp Asp His Met Ile 1140 1145 1150		
Leu Arg Met Thr Pro Asp Gly Arg Val Arg Val Ile Ser Gly Arg Pro 1155 1160 1165		
Leu His Cys Ala Thr Ala Ser Thr Ala Tyr Asp Thr Asp Leu Ala Thr 1170 1175 1180		
His Ala Thr Leu Val Met Pro Gln Ser Ile Ala Phe Gly Pro Leu Gly 1185 1190 1195 1200		
Glu Leu Tyr Val Ala Glu Ser Asp Ser Gln Arg Ile Asn Arg Val Arg 1205 1210 1215		
Val Ile Gly Thr Asp Gly Arg Ile Ala Pro Phe Ala Gly Ala Glu Ser 1220 1225 1230		
Lys Cys Asn Cys Leu Glu Arg Gly Cys Asp Cys Phe Glu Ala Glu His		

1235	1240	1245
Tyr Leu Ala Thr Ser Ala Lys	Phe Asn Thr Ile Ala Ala Leu Ala Val	
1250	1255	1260
Thr Pro Asp Ser His Val His Ile Ala Asp Gln Ala Asn Tyr Arg Ile		
1265	1270	1275 1280
Arg Ser Val Met Ser Ser Ile Pro Glu Ala Ser Pro Ser Arg Glu Tyr		
1285	1290	1295
Glu Ile Tyr Ala Pro Asp Met Gln Glu Ile Tyr Ile Phe Asn Arg Phe		
1300	1305	1310
Gly Gln His Val Ser Thr Arg Asn Ile Leu Thr Gly Glu Thr Thr Tyr		
1315	1320	1325
Val Phe Thr Tyr Asn Val Asn Thr Ser Asn Gly Lys Leu Ser Thr Val		
1330	1335	1340
Thr Asp Ala Ala Gly Asn Lys Val Phe Leu Leu Arg Asp Tyr Thr Ser		
1345	1350	1355 1360
Gln Val Asn Ser Ile Glu Asn Thr Lys Gly Gln Lys Cys Arg Leu Arg		
1365	1370	1375
Met Thr Arg Met Lys Met Leu His Glu Leu Ser Thr Pro Asp Asn Tyr		
1380	1385	1390
Asn Val Thr Tyr Glu Tyr His Gly Pro Thr Gly Leu Leu Arg Thr Lys		
1395	1400	1405
Leu Asp Ser Thr Gly Arg Ser Tyr Val Tyr Asn Tyr Asp Glu Phe Gly		
1410	1415	1420
Arg Leu Thr Ser Ala Val Thr Pro Thr Gly Arg Val Ile Glu Leu Ser		
1425	1430	1435 1440
Phe Asp Leu Ser Val Lys Gly Ala Gln Val Lys Val Ser Glu Asn Ala		
1445	1450	1455
Gln Lys Glu Met Ser Leu Leu Ile Gln Gly Ala Thr Val Ile Val Arg		
1460	1465	1470
Asn Gly Ala Ala Glu Ser Arg Thr Thr Val Asp Met Asp Gly Ser Thr		
1475	1480	1485
Thr Ser Ile Thr Pro Trp Gly His Asn Leu Gln Met Glu Val Ala Pro		
1490	1495	1500
Tyr Thr Ile Leu Ala Glu Gln Ser Pro Leu Leu Gly Glu Ser Tyr Pro		
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Val Pro Ala Lys Gln Arg Thr Glu Ile Ala Gly Asp Leu Ala Asn Arg		
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Phe Glu Trp Arg Tyr Phe Val Arg Arg Gln Gln Pro Leu Gln Ala Gly		

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Lys Gln Ser Lys Gly Pro Pro Arg Pro Val Thr Glu Val Gly Arg Lys 1555 1560 1565		
Leu Arg Val Asn Gly Asp Asn Val Leu Thr Leu Glu Tyr Asp Arg Glu 1570 1575 1580		
Thr Gln Ser Val Val Val Met Val Asp Asp Lys Gln Glu Leu Leu Asn 1585 1590 1595 1600		
Val Thr Tyr Asp Arg Thr Ser Arg Pro Ile Ser Phe Arg Pro Gln Ser 1605 1610 1615		
Gly Asp Tyr Ala Tyr Val Asp Leu Glu Tyr Asp Arg Phe Gly Arg Leu 1620 1625 1630		
Val Ser Trp Lys Trp Gly Val Leu Gln Glu Ala Tyr Ser Phe Asp Arg 1635 1640 1645		
Asn Gly Arg Leu Asn Glu Ile Lys Tyr Gly Asp Gly Ser Thr Met Val 1650 1655 1660		
Tyr Ala Phe Lys Asp Met Phe Gly Ser Leu Pro Leu Lys Val Thr Thr 1665 1670 1675 1680		
Pro Arg Arg Ser Asp Tyr Leu Leu Gln Tyr Asp Asp Ala Gly Ala Leu 1685 1690 1695		
Gln Ser Leu Thr Thr Pro Arg Gly His Ile His Ala Phe Ser Leu Gln 1700 1705 1710		
Thr Ser Leu Gly Phe Phe Lys Tyr Gln Tyr Tyr Ser Pro Ile Asn Arg 1715 1720 1725		
His Pro Phe Glu Ile Leu Tyr Asn Asp Glu Gly Gln Ile Leu Ala Lys 1730 1735 1740		
Ile His Pro His Gln Ser Gly Lys Val Ala Phe Val His Asp Thr Ala 1745 1750 1755 1760		
Gly Arg Leu Glu Thr Ile Leu Ala Gly Leu Ser Ser Thr His Tyr Thr 1765 1770 1775		
Tyr Gln Asp Thr Thr Ser Leu Val Lys Ser Val Glu Val Gln Glu Pro 1780 1785 1790		
Gly Phe Glu Leu Arg Arg Glu Phe Lys Tyr His Ala Gly Ile Leu Lys 1795 1800 1805		
Asp Glu Lys Leu Arg Phe Gly Ser Lys Asn Ser Leu Ala Ser Ala Arg 1810 1815 1820		
Tyr Lys Tyr Ala Tyr Asp Gly Asn Ala Arg Leu Ser Gly Ile Glu Met 1825 1830 1835 1840		
Ala Ile Asp Asp Lys Glu Leu Pro Thr Thr Arg Tyr Lys Tyr Ser Gln		

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1860					1865					1870						
Ala	Phe	Asn	Arg	Thr	Val	Ile	Gln	Asp	Ser	Ala	Lys	Gln	Phe	Phe	Ala	
1875					1880					1885						
Ile	Val	Asp	Tyr	Asp	Gln	His	Gly	Arg	Val	Lys	Ser	Val	Leu	Met	Asn	
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Val	Lys	Asn	Ile	Asp	Val	Phe	Arg	Leu	Glu	Leu	Asp	Tyr	Asp	Leu	Arg	
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Asn	Arg	Ile	Lys	Ser	Gln	Lys	Thr	Thr	Phe	Gly	Arg	Ser	Thr	Ala	Phe	
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Asp	Lys	Ile	Asn	Tyr	Asn	Ala	Asp	Gly	His	Val	Val	Glu	Val	Leu	Gly	
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Thr	Asn	Asn	Trp	Lys	Tyr	Leu	Phe	Asp	Glu	Asn	Gly	Asn	Thr	Val	Gly	
1955					1960					1965						
Val	Val	Asp	Gln	Gly	Glu	Lys	Phe	Asn	Leu	Gly	Tyr	Asp	Ile	Gly	Asp	
1970					1975					1980						
Arg	Val	Ile	Lys	Val	Gly	Asp	Val	Glu	Phe	Asn	Asn	Tyr	Asp	Ala	Arg	
1985					1990					1995					2000	
Gly	Phe	Val	Val	Lys	Arg	Gly	Glu	Gln	Lys	Tyr	Arg	Tyr	Asn	Asn	Arg	
2005					2010					2015						
Gly	Gln	Leu	Ile	His	Ser	Phe	Glu	Arg	Glu	Arg	Phe	Gln	Ser	Trp	Tyr	
2020					2025					2030						
Tyr	Tyr	Asp	Asp	Arg	Ser	Arg	Leu	Val	Ala	Trp	His	Asp	Asn	Lys	Gly	
2035					2040					2045						
Asn	Thr	Thr	Gln	Tyr	Tyr	Tyr	Ala	Asn	Pro	Arg	Thr	Pro	His	Leu	Val	
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Thr	His	Val	His	Phe	Pro	Lys	Ile	Ser	Arg	Thr	Met	Lys	Leu	Phe	Tyr	
2065					2070					2075					2080	
Asp	Asp	Arg	Asp	Met	Leu	Ile	Ala	Leu	Glu	His	Glu	Asp	Gln	Arg	Tyr	
2085					2090					2095						
Tyr	Val	Ala	Thr	Asp	Gln	Asn	Gly	Ser	Pro	Leu	Ala	Phe	Phe	Asp	Gln	
2100					2105					2110						
Asn	Gly	Ser	Ile	Val	Lys	Glu	Met	Lys	Arg	Thr	Pro	Phe	Gly	Arg	Ile	
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Ile	Lys	Asp	Thr	Lys	Pro	Glu	Phe	Phe	Val	Pro	Ile	Asp	Phe	His	Gly	
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Gly	Leu	Ile	Asp	Pro	His	Thr	Lys	Leu	Val	Tyr	Thr	Glu	Gln	Arg	Gln	

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Tyr Asp Pro His Val Gly Gln Trp Met Thr Pro Leu Trp Glu Thr Leu			
	2165	2170	2175
Ala Thr Glu Met Ser His Pro Thr Asp Val Phe Ile Tyr Arg Tyr His			
	2180	2185	2190
Asn Asn Asp Pro Ile Asn Pro Asn Lys Pro Gln Asn Tyr Met Ile Asp			
	2195	2200	2205
Leu Asp Ser Trp Leu Gln Leu Phe Gly Tyr Asp Leu Asn Asn Met Gln			
	2210	2215	2220
Ser Ser Arg Tyr Thr Lys Leu Ala Gln Tyr Thr Pro Gln Ala Ser Ile			
	2225	2230	2235
Lys Ser Asn Thr Leu Ala Pro Asp Phe Gly Val Ile Ser Gly Leu Glu			
	2245	2250	2255
Cys Ile Val Glu Lys Thr Ser Glu Lys Phe Ser Asp Phe Asp Phe Val			
	2260	2265	2270
Pro Lys Pro Leu Leu Lys Thr Glu Pro Lys Met Arg Asn Leu Leu Pro			
	2275	2280	2285
Arg Val Ser Tyr Arg Arg Gly Val Phe Gly Glu Gly Val Leu Leu Ser			
	2290	2295	2300
Arg Ile Gly Gly Arg Ala Leu Val Ser Val Val Asp Gly Ser Asn Ser			
	2305	2310	2315
Val Val Gln Asp Val Val Ser Ser Val Phe Asn Asn Ser Tyr Phe Leu			
	2325	2330	2335
Asp Leu His Phe Ser Ile His Asp Gln Asp Val Phe Tyr Phe Val Lys			
	2340	2345	2350
Asp Asn Val Leu Lys Leu Arg Asp Asp Asn Glu Glu Leu Arg Arg Leu			
	2355	2360	2365
Gly Gly Met Phe Asn Ile Ser Thr His Glu Ile Ser Asp His Gly Gly			
	2370	2375	2380
Ser Ala Ala Lys Glu Leu Arg Leu His Gly Pro Asp Ala Val Val Ile			
	2385	2390	2395
Ile Lys Tyr Gly Val Asp Pro Glu Gln Glu Arg His Arg Ile Leu Lys			
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His Ala His Lys Arg Ala Val Glu Arg Ala Trp Glu Leu Glu Lys Gln			
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Leu Val Ala Ala Gly Phe Gln Gly Arg Gly Asp Trp Thr Glu Glu Glu			
	2435	2440	2445
Lys Glu Glu Leu Val Gln His Gly Asp Val Asp Gly Trp Asn Gly Ile			



2450	2455	2460
Asp Ile His Ser Ile His Lys Tyr Pro Gln Leu Ala Asp Asp Pro Gly		
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Asn Val Ala Phe Gln Arg Asp Ala Lys Arg Lys Arg Arg Lys Thr Gly		
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Met Val Gln Asp Gln Leu Arg Asn Ser Tyr Gln Ile Gly Tyr Asp Gly		
	35	40 45
Ser Leu Arg Ile Ile Tyr Ala Ser Gly Leu Asp Ser His Tyr Gln Thr		
	50	55 60
Glu Pro His Val Leu Ala Gly Thr Ala Asn Pro Thr Val Ala Lys Arg		
	65	70 75 80
Asn Met Thr Leu Pro Gly Glu Asn Gly Gln Asn Leu Val Glu Trp Arg		
	85	90 95
Phe Arg Lys Glu Gln Ala Gln Gly Lys Val Asn Val Phe Gly Arg Lys		
	100	105 110
Leu Arg Val Asn Gly Arg Asn Leu Leu Ser Val Asp Phe Asp Arg Thr		
	115	120 125
Thr Lys Thr Glu Lys Ile Tyr Asp Asp His Arg Lys Phe Leu Leu Arg		
	130	135 140
Ile Ala Tyr Asp Thr Ser Gly His Pro Thr Leu Trp Leu Pro Ser Ser		
	145	150 155 160
Lys Leu Met Ala Val Asn Val Thr Tyr Ser Ser Thr Gly Gln Ile Ala		
	165	170 175
Ser Ile Gln Arg Gly Thr Thr Ser Glu Lys Val Asp Tyr Asp Gly Gln		
	180	185 190

Gly	Arg	Ile	Val	Ser	Arg	Val	Phe	Ala	Asp	Gly	Lys	Thr	Trp	Ser	Tyr	195	200	205	
Thr	Tyr	Leu	Glu	Lys	Ser	Met	Val	Leu	Leu	Leu	His	Ser	Gln	Arg	Gln	210	215	220	
Tyr	Ile	Phe	Glu	Tyr	Asp	Met	Trp	Asp	Arg	Leu	Ser	Ala	Ile	Thr	Met	225	230	235	240
Pro	Ser	Val	Ala	Arg	His	Thr	Met	Gln	Thr	Ile	Arg	Ser	Ile	Gly	Tyr	245	250	255	
Tyr	Arg	Asn	Ile	Tyr	Asn	Pro	Pro	Glu	Ser	Asn	Ala	Ser	Ile	Ile	Thr	260	265	270	
Asp	Tyr	Asn	Glu	Glu	Gly	Leu	Leu	Leu	Gln	Thr	Ala	Phe	Leu	Gly	Thr	275	280	285	
Ser	Arg	Arg	Val	Leu	Phe	Lys	Tyr	Arg	Arg	Gln	Thr	Arg	Leu	Ser	Glu	290	295	300	
Ile	Leu	Tyr	Asp	Ser	Thr	Arg	Val	Ser	Phe	Thr	Tyr	Asp	Glu	Thr	Ala	305	310	315	320
Gly	Val	Leu	Lys	Thr	Val	Asn	Leu	Gln	Ser	Asp	Gly	Phe	Ile	Cys	Thr	325	330	335	
Ile	Arg	Tyr	Arg	Gln	Ile	Gly	Pro	Leu	Ile	Asp	Arg	Gln	Ile	Phe	Arg	340	345	350	
Phe	Ser	Glu	Asp	Gly	Met	Val	Asn	Ala	Arg	Phe	Asp	Tyr	Ser	Tyr	Asp	355	360	365	
Asn	Ser	Phe	Arg	Val	Thr	Ser	Met	Gln	Gly	Val	Ile	Asn	Glu	Thr	Pro	370	375	380	
Leu	Pro	Ile	Asp	Leu	Tyr	Gln	Phe	Asp	Asp	Ile	Ser	Gly	Lys	Val	Glu	385	390	395	400
Gln	Phe	Gly	Lys	Phe	Gly	Val	Ile	Tyr	Tyr	Asp	Ile	Asn	Gln	Ile	Ile	405	410	415	
Ser	Thr	Ala	Val	Met	Thr	Tyr	Thr	Lys	His	Phe	Asp	Ala	His	Gly	Arg	420	425	430	
Ile	Lys	Glu	Ile	Gln	Tyr	Glu	Ile	Phe	Arg	Ser	Leu	Met	Tyr	Trp	Ile	435	440	445	
Thr	Ile	Gln	Tyr	Asp	Asn	Met	Gly	Arg	Val	Thr	Lys	Arg	Glu	Ile	Lys	450	455	460	
Ile	Gly	Pro	Phe	Ala	Asn	Thr	Thr	Lys	Tyr	Ala	Tyr	Glu	Tyr	Asp	Val	465	470	475	480
Asp	Gly	Gln	Leu	Gln	Thr	Val	Tyr	Leu	Asn	Glu	Lys	Ile	Met	Trp	Arg	485	490	495	

Tyr Asn Tyr Asp Leu Asn Gly Asn Leu His Leu Leu Asn Pro Ser Asn  
 500 505 510  
 Ser Ala Arg Leu Thr Pro Leu Arg Tyr Asp Leu Arg Asp Arg Ile Thr  
 515 520 525  
 Arg Leu Gly Asp Val Gln Tyr Arg Leu Asp Glu Asp Gly Phe Leu Arg  
 530 535 540  
 Gln Arg Gly Thr Glu Ile Phe Glu Tyr Ser Ser Lys Gly Leu Leu Thr  
 545 550 555 560  
 Arg Val Tyr Ser Lys Gly Ser Gly Trp Thr Val Ile Tyr Arg Tyr Asp  
 565 570 575  
 Gly Leu Gly Arg Arg Val Ser Ser Lys Thr Ser Leu Gly Gln His Leu  
 580 585 590  
 Gln Phe Phe Tyr Ala Asp Leu Thr Tyr Pro Thr Arg Ile Thr His Val  
 595 600 605  
 Tyr Asn His Ser Ser Ser Glu Ile Thr Ser Leu Tyr Tyr Asp Leu Gln  
 610 615 620  
 Gly His Leu Phe Ala Met Glu Ile Ser Ser Gly Asp Glu Phe Tyr Ile  
 625 630 635 640  
 Ala Ser Asp Asn Thr Gly Thr Pro Leu Ala Val Phe Ser Ser Asn Gly  
 645 650 655  
 Leu Met Leu Lys Gln Ile Gln Tyr Thr Ala Tyr Gly Glu Ile Tyr Phe  
 660 665 670  
 Asp Ser Asn Ile Asp Phe Gln Leu Val Ile Gly Phe His Gly Gly Leu  
 675 680 685  
 Tyr Asp Pro Leu Thr Lys Leu Ile His Phe Gly Glu Arg Asp Tyr Asp  
 690 695 700  
 Ile Leu Ala Gly Arg Trp Thr Thr Pro Asp Ile Glu Ile Trp Lys Arg  
 705 710 715 720  
 Ile Gly Lys Asp Pro Ala Pro Phe Asn Leu Tyr Met Phe Arg Asn Asn  
 725 730 735  
 Asn Pro Ala Ser Lys Ile His Asp Val Lys Asp Tyr Ile Thr Asp Val  
 740 745 750  
 Asn Ser Trp Leu Val Thr Phe Gly Phe His Leu His Asn Ala Ile Pro  
 755 760 765  
 Gly Phe Pro Val Pro Lys Phe Asp Leu Thr Glu Pro Ser Tyr Glu Leu  
 770 775 780  
 Val Lys Ser Gln Gln Trp Asp Asp Ile Pro Pro Ile Phe Gly Val Gln  
 785 790 795 800

Gln Gln Val Ala Arg Gln Ala Lys Ala Phe Leu Ser Leu Gly Lys Met  
 805 810 815  
 Ala Glu Val Gln Val Ser Arg Arg Arg Ala Gly Gly Ala Gln Ser Trp  
 820 825 830  
 Leu Trp Phe Ala Thr Val Lys Ser Leu Ile Gly Lys Gly Val Met Leu  
 835 840 845  
 Ala Val Ser Gln Gly Arg Val Gln Thr Asn Val Leu Asn Ile Ala Asn  
 850 855 860  
 Glu Asp Cys Ile Lys Val Ala Ala Val Leu Asn Asn Ala Phe Tyr Leu  
 865 870 875 880  
 Glu Asn Leu His Phe Thr Ile Glu Gly Lys Asp Thr His Tyr Phe Ile  
 885 890 895  
 Lys Thr Thr Thr Pro Glu Ser Asp Leu Gly Thr Leu Arg Leu Thr Ser  
 900 905 910  
 Gly Arg Lys Ala Leu Glu Asn Gly Ile Asn Val Thr Val Ser Gln Ser  
 915 920 925  
 Thr Thr Val Val Asn Gly Arg Thr Arg Arg Phe Ala Asp Val Glu Met  
 930 935 940  
 Gln Phe Gly Ala Leu Ala Leu His Val Arg Tyr Gly Met Thr Leu Asp  
 945 950 955 960  
 Glu Glu Lys Ala Arg Ile Leu Glu Gln Ala Arg Gln Arg Ala Leu Ala  
 965 970 975  
 Arg Ala Trp Ala Arg Glu Gln Gln Arg Val Arg Asp Gly Glu Glu Gly  
 980 985 990  
 Ala Arg Leu Trp Thr Glu Gly Glu Lys Arg Gln Leu Leu Ser Ala Gly  
 995 1000 1005  
 Lys Val Gln Gly Tyr Asp Gly Tyr Tyr Val Leu Ser Val Glu Gln Tyr  
 1010 1015 1020  
 Pro Glu Leu Ala Asp Ser Ala Asn Asn Ile Gln Phe Leu Arg Gln Ser  
 1025 1030 1035 1040  
 Glu Ile Gly Arg Arg  
 1045

<210> 55

<211> 332

<212> PRT

<213> *Drosophila melanogaster*

<400> 55

Met Ile Leu Lys Glu Glu His Pro His Gln Ser Ile Glu Thr Ala Ala  
 1 5 10 15

Asn	Ala	Ala	Arg	Gln	Ala	Gln	Val	Arg	Trp	Arg	Met	Ala	His	Leu	Lys	20	25	30
Ala	Leu	Ser	Arg	Thr	Arg	Thr	Pro	Ala	His	Gly	Asn	Cys	Cys	Gly	Arg	35	40	45
Val	Val	Ser	Lys	Asn	His	Phe	Phe	Lys	His	Ser	Arg	Ala	Phe	Leu	Trp	50	55	60
Phe	Leu	Leu	Cys	Asn	Leu	Val	Met	Asn	Ala	Asp	Ala	Phe	Ala	His	Ser	65	70	75
Gln	Leu	Leu	Ile	Asn	Val	Gln	Asn	Gln	Gly	Gly	Glu	Val	Ile	Gln	Glu	85	90	95
Ser	Ile	Thr	Ser	Asn	Ile	Gly	Glu	Asp	Leu	Ile	Thr	Leu	Glu	Phe	Gln	100	105	110
Lys	Thr	Asp	Gly	Thr	Leu	Ile	Thr	Gln	Val	Ile	Asp	Phe	Arg	Asn	Glu	115	120	125
Val	Gln	Ile	Leu	Lys	Ala	Leu	Val	Leu	Gly	Glu	Glu	Glu	Arg	Gly	Gln	130	135	140
Ser	Gln	Tyr	Gln	Val	Met	Cys	Phe	Ala	Thr	Lys	Phe	Asn	Lys	Gly	Asp	145	150	155
Phe	Ile	Ser	Ser	Ala	Ala	Met	Ala	Lys	Leu	Arg	Gln	Lys	Asn	Pro	His	165	170	175
Thr	Ile	Arg	Thr	Pro	Glu	Glu	Asp	Lys	Gly	Arg	Glu	Thr	Phe	Thr	Met	180	185	190
Ser	Ser	Trp	Val	Gln	Leu	Asn	Arg	Ser	Leu	Pro	Ile	Thr	Arg	His	Leu	195	200	205
Gln	Gly	Leu	Cys	Ala	Glu	Ala	Met	Asp	Ala	Thr	Tyr	Val	Arg	Asp	Val	210	215	220
Asp	Leu	Lys	Ala	Trp	Ala	Glu	Leu	Pro	Gly	Ser	Ser	Ile	Ser	Ser	Leu	225	230	235
Glu	Ala	Ala	Thr	Glu	Lys	Phe	Pro	Asp	Thr	Leu	Ser	Thr	Arg	Cys	Asn	245	250	255
Glu	Val	Ser	Ser	Leu	Trp	Ala	Pro	Cys	Leu	Cys	Asn	Leu	Glu	Thr	Cys	260	265	270
Ile	Gly	Trp	Tyr	Pro	Cys	Gly	Leu	Lys	Tyr	Cys	Lys	Gly	Lys	Gly	Val	275	280	285
Ala	Gly	Ala	Asp	Ser	Ser	Gly	Ala	Gln	Gln	Gln	Ala	Gln	Pro	Thr	Asn	290	295	300
Tyr	Arg	Cys	Gly	Ile	Lys	Thr	Cys	Arg	Lys	Cys	Thr	Gln	Phe	Thr	Tyr	305	310	315

Tyr Val Arg Gln Lys Gln Gln Cys Leu Trp Asp Glu  
325 330

<210> 56  
<211> 487  
<212> PRT  
<213> Drosophila melanogaster

<220>  
<221> VARIANT  
<222> (333)  
<223> Where Xaa is any amino acid as defined in the  
specification

<400> 56  
Met Ile Leu Lys Glu Glu His Pro His Gln Ser Ile Glu Thr Ala Ala  
1 5 10 15  
Asn Ala Ala Arg Gln Ala Gln Val Arg Trp Arg Met Ala His Leu Lys  
20 25 30  
Ala Leu Ser Arg Thr Arg Thr Pro Ala His Gly Asn Cys Cys Gly Arg  
35 40 45  
Val Val Ser Lys Asn His Phe Phe Lys His Ser Arg Ala Phe Leu Trp  
50 55 60  
Phe Leu Leu Cys Asn Leu Val Met Asn Ala Asp Ala Phe Ala His Ser  
65 70 75 80  
Gln Leu Leu Ile Asn Val Gln Asn Gln Gly Gly Glu Val Ile Gln Glu  
85 90 95  
Ser Ile Thr Ser Asn Ile Gly Glu Asp Leu Ile Thr Leu Glu Phe Gln  
100 105 110  
Lys Thr Asp Gly Thr Leu Ile Thr Gln Val Ile Asp Phe Arg Asn Glu  
115 120 125  
Val Gln Ile Leu Lys Ala Leu Val Leu Gly Glu Glu Glu Arg Gly Gln  
130 135 140  
Ser Gln Tyr Gln Val Met Cys Phe Ala Thr Lys Phe Asn Lys Gly Asp  
145 150 155 160  
Phe Ile Ser Ser Ala Ala Met Ala Lys Leu Arg Gln Lys Asn Pro His  
165 170 175  
Thr Ile Arg Thr Pro Glu Glu Asp Lys Gly Arg Glu Thr Phe Thr Met  
180 185 190  
Ser Ser Trp Val Gln Leu Asn Arg Ser Leu Pro Ile Thr Arg His Leu  
195 200 205  
Gln Gly Leu Cys Ala Glu Ala Met Asp Ala Thr Tyr Val Arg Asp Val

210	215	220
Asp Leu Lys Ala Trp Ala Glu Leu Pro Gly Ser Ser Ile Ser Ser Leu 225 230 235 240		
Glu Ala Ala Thr Glu Lys Phe Pro Asp Thr Leu Ser Thr Arg Cys Asn 245 250 255		
Glu Val Ser Ser Leu Trp Ala Pro Cys Leu Cys Asn Leu Glu Thr Cys 260 265 270		
Ile Gly Trp Tyr Pro Cys Gly Leu Lys Tyr Cys Lys Gly Lys Gly Val 275 280 285		
Ala Gly Ala Asp Ser Ser Gly Ala Gln Gln Gln Ala Gln Pro Thr Asn 290 295 300		
Tyr Arg Cys Gly Ile Lys Thr Cys Arg Lys Cys Thr Gln Phe Thr Tyr 305 310 315 320		
Tyr Val Arg Gln Lys Gln Gln Cys Leu Trp Asp Glu Xaa Arg Arg Gly 325 330 335		
Glu Leu Gln Leu Met Gln Met Arg Cys Ala Arg Arg Arg Asn Gly Ser 340 345 350		
Glu Phe Gly Asp Asp Ala Ser Ala Thr Cys Pro Gly Gly Glu Thr Arg 355 360 365		
Ala Ala Thr Thr Thr Ala Thr Ile Thr Gly Gly Gly Ala Gly Gly Ser 370 375 380		
Gly Lys Asp Thr Thr Ala Gly Thr Thr Thr Thr Thr Asn Lys Leu His 385 390 395 400		
Gln Leu Leu Leu Leu Val Gln Gln Gln Met Pro Phe Thr Leu Trp Ser 405 410 415		
Phe Pro Val His His Ile Ser Gln Ser His His Gln Ser Gln Ser Gln 420 425 430		
His Lys Pro Ser Arg Gln Gln Lys Gln His Gln His His Ser Gln Val 435 440 445		
Ala Pro Thr Ser His His Gln Ser Ser Ser Ser Thr Pro Pro Thr Pro 450 455 460		
Ser Thr Ser Ser Ser Pro Pro Ser Ser Ser Ser Ser Ser Ser Ser 465 470 475 480		
Ala Met Ala Ala Ile Val Ala 485		

<210> 57  
 <211> 487  
 <212> PRT

<213> Drosophila melanogaster

<220>

<221> VARIANT

<222> (333)

<223> Where Xaa is any amino acid as described in the  
specification

<400> 57

Met Ile Leu Lys Glu Glu His Pro His Gln Ser Ile Glu Thr Ala Ala  
1 5 10 15

Asn Ala Ala Arg Gln Ala Gln Val Arg Trp Arg Met Ala His Leu Lys  
20 25 30

Ala Leu Ser Arg Thr Arg Thr Pro Ala His Gly Asn Cys Cys Gly Arg  
35 40 45

Val Val Ser Lys Asn His Phe Phe Lys His Ser Arg Ala Phe Leu Trp  
50 55 60

Phe Leu Leu Cys Asn Leu Val Met Asn Ala Asp Ala Phe Ala His Ser  
65 70 75 80

Gln Leu Leu Ile Asn Val Gln Asn Gln Gly Gly Glu Val Ile Gln Glu  
85 90 95

Ser Ile Thr Ser Asn Ile Gly Glu Asp Leu Ile Thr Leu Glu Phe Gln  
100 105 110

Lys Thr Asp Gly Thr Leu Ile Thr Gln Val Ile Asp Phe Arg Asn Glu  
115 120 125

Val Gln Ile Leu Lys Ala Leu Val Leu Gly Glu Glu Glu Arg Gly Gln  
130 135 140

Ser Gln Tyr Gln Val Met Cys Phe Ala Thr Lys Phe Asn Lys Gly Asp  
145 150 155 160

Phe Ile Ser Ser Ala Ala Met Ala Lys Leu Arg Gln Lys Asn Pro His  
165 170 175

Thr Ile Arg Thr Pro Glu Glu Asp Lys Gly Arg Glu Thr Phe Thr Met  
180 185 190

Ser Ser Trp Val Gln Leu Asn Arg Ser Leu Pro Ile Thr Arg His Leu  
195 200 205

Gln Gly Leu Cys Ala Glu Ala Met Asp Ala Thr Tyr Val Arg Asp Val  
210 215 220

Asp Leu Lys Ala Trp Ala Glu Leu Pro Gly Ser Ser Ile Ser Ser Leu  
225 230 235 240

Glu Ala Ala Thr Glu Lys Phe Pro Asp Thr Leu Ser Thr Arg Cys Asn  
245 250 255



Glu Val Ser Ser Leu Trp Ala Pro Cys Leu Cys Asn Leu Glu Thr Cys  
 260 265 270  
 Ile Gly Trp Tyr Pro Cys Gly Leu Lys Tyr Cys Lys Gly Lys Gly Val  
 275 280 285  
 Ala Gly Ala Asp Ser Ser Gly Ala Gln Gln Gln Ala Gln Pro Thr Asn  
 290 295 300  
 Tyr Arg Cys Gly Ile Lys Thr Cys Arg Lys Cys Thr Gln Phe Thr Tyr  
 305 310 315 320  
 Tyr Val Arg Gln Lys Gln Gln Cys Leu Trp Asp Glu Xaa Arg Arg Gly  
 325 330 335  
 Glu Leu Gln Leu Met Gln Met Arg Cys Ala Arg Arg Arg Asn Gly Ser  
 340 345 350  
 Glu Phe Gly Asp Asp Ala Ser Ala Thr Cys Pro Gly Gly Glu Thr Arg  
 355 360 365  
 Ala Ala Thr Thr Thr Ala Thr Ile Thr Gly Gly Gly Ala Gly Gly Ser  
 370 375 380  
 Gly Lys Asp Thr Thr Ala Ala Thr Thr Thr Thr Asn Lys Leu Arg  
 385 390 395 400  
 Gln Leu Leu Leu Leu Val Gln Gln Gln Met Pro Phe Ala Leu Trp Ser  
 405 410 415  
 Phe Pro Val His His Ile Ser Gln Ser His His Gln Ser Gln Ser Gln  
 420 425 430  
 His Lys Pro Ser Arg Gln Gln Lys Gln His Gln His His Ser Gln Val  
 435 440 445  
 Ala Pro Thr Ser His His Gln Ser Ser Ser Ser Thr Pro Pro Thr Pro  
 450 455 460  
 Ser Thr Ser Ser Ser Pro Pro Ser Ser Ser Ser Ser Ser Ser Ser Ser  
 465 470 475 480  
 Ala Met Ala Ala Ile Val Ala  
 485

<210> 58  
 <211> 305  
 <212> PRT  
 <213> *Drosophila virilis*

<400> 58  
 Met Ala Tyr Gly Ala Pro Gln Cys Ala Gln His Leu Pro Pro Ile Gly  
 1 5 10 15  
 Thr Pro Thr Leu Arg Gln Arg Ser Val Ser Cys Tyr His Phe Phe Arg  
 20 25 30

His Ser Arg Gly Phe Leu Trp Phe Val Leu Cys Asn Leu Leu Leu Thr  
 35 40 45  
 Pro Asn Ile Ser Asp Ala Gln Leu Leu Ile Asn Val Gln Asn Gln Gly  
 50 55 60  
 Gly Glu Val Ile Gln Glu Ser Ile Thr Ser Asn Ile Gly Glu Asp Leu  
 65 70 75 80  
 Ile Thr Leu Glu Phe Gln Lys Thr Asp Gly Thr Leu Ile Thr Gln Leu  
 85 90 95  
 Ile Asp Phe Arg Asn Glu Val Gln Ile Leu Lys Ala Leu Val Leu Gly  
 100 105 110  
 Glu Glu Glu Arg Gly Gln Ser Gln Tyr Gln Val Met Cys Phe Ala Thr  
 115 120 125  
 Lys Phe Asn Lys Gly Asp Phe Ile Ser Ser Asp Ala Met Ala Lys Leu  
 130 135 140  
 Arg Gln Lys Asn Pro His Thr Ile Arg Thr Pro Glu Glu Asp Lys Gly  
 145 150 155 160  
 Arg Glu Thr Tyr Thr Met Ser Ser Trp Val Gln Leu Asn Arg Ser Leu  
 165 170 175  
 Pro Ile Thr Arg His Leu Gln Ser Leu Cys Ala Glu Ala Thr Asp Ala  
 180 185 190  
 Thr Tyr Val Arg Asp Val Asp Leu Lys Ala Trp Ala Glu Leu Pro Gly  
 195 200 205  
 Ser Ser Ile Ser Ser Leu Glu Ala Ala Thr Glu Lys Phe Pro Asp Ala  
 210 215 220  
 Leu Ser Thr Arg Cys Asn Glu Val Ser Ser Leu Trp Ala Pro Cys Leu  
 225 230 235 240  
 Cys Thr Leu Glu Thr Cys Ile Gly Trp Tyr Pro Cys Gly Leu Lys Tyr  
 245 250 255  
 Cys Lys Gly Lys Ser Val Gly Gly Asp Thr Ser Gly Thr Gln Gln Gln  
 260 265 270  
 Gln Gln Gln Thr Asn Tyr Arg Cys Gly Ile Lys Thr Cys Arg Lys Cys  
 275 280 285  
 Thr Gln Phe Thr Tyr Tyr Val Arg Gln Lys Gln Gln Cys Leu Trp Asp  
 290 295 300  
 Glu  
 305

<210> 59

<211> 983  
 <212> PRT  
 <213> Homo sapiens

<400> 59

Met	Asp	Cys	Gln	Leu	Ser	Ile	Leu	Leu	Leu	Leu	Ser	Cys	Ser	Val	Leu
1				5					10					15	
Asp	Ser	Phe	Gly	Glu	Leu	Ile	Pro	Gln	Pro	Ser	Asn	Glu	Val	Asn	Leu
			20					25					30		
Leu	Asp	Ser	Lys	Thr	Ile	Gln	Gly	Glu	Leu	Gly	Trp	Ile	Ser	Tyr	Pro
		35					40					45			
Ser	His	Gly	Trp	Glu	Glu	Ile	Ser	Gly	Val	Asp	Glu	His	Tyr	Thr	Pro
	50					55					60				
Ile	Arg	Thr	Tyr	Gln	Val	Cys	Asn	Val	Met	Asp	His	Ser	Gln	Asn	Asn
	65				70					75					80
Trp	Leu	Arg	Thr	Asn	Trp	Val	Pro	Arg	Asn	Ser	Ala	Gln	Lys	Ile	Tyr
				85					90					95	
Val	Glu	Leu	Lys	Phe	Thr	Leu	Arg	Asp	Cys	Asn	Ser	Ile	Pro	Leu	Val
			100					105					110		
Leu	Gly	Thr	Cys	Lys	Glu	Thr	Phe	Asn	Leu	Tyr	Tyr	Met	Glu	Ser	Asp
		115					120					125			
Asp	Asp	His	Gly	Val	Lys	Phe	Arg	Glu	His	Gln	Phe	Thr	Lys	Ile	Asp
	130					135					140				
Thr	Ile	Ala	Ala	Asp	Glu	Ser	Phe	Thr	Gln	Met	Asp	Leu	Gly	Asp	Arg
145				150						155					160
Ile	Leu	Lys	Leu	Asn	Thr	Glu	Ile	Arg	Glu	Val	Gly	Pro	Val	Asn	Lys
			165						170					175	
Lys	Gly	Phe	Tyr	Leu	Ala	Phe	Gln	Asp	Val	Gly	Ala	Cys	Val	Ala	Leu
		180						185					190		
Val	Ser	Val	Arg	Val	Tyr	Phe	Lys	Lys	Cys	Pro	Phe	Thr	Val	Lys	Asn
		195					200					205			
Leu	Ala	Met	Phe	Pro	Asp	Thr	Val	Pro	Met	Asp	Ser	Gln	Ser	Leu	Val
	210					215					220				
Glu	Val	Arg	Gly	Ser	Cys	Val	Asn	Asn	Ser	Lys	Glu	Glu	Asp	Pro	Pro
225					230					235					240
Arg	Met	Tyr	Cys	Ser	Thr	Glu	Gly	Glu	Trp	Leu	Val	Pro	Ile	Gly	Lys
				245					250					255	
Cys	Ser	Cys	Asn	Ala	Gly	Tyr	Glu	Glu	Arg	Gly	Phe	Met	Cys	Gln	Ala
			260					265					270		
Cys	Arg	Pro	Gly	Phe	Tyr	Lys	Ala	Leu	Asp	Gly	Asn	Met	Lys	Cys	Ala

275					280					285					
Lys	Cys	Pro	Pro	His	Ser	Ser	Thr	Gln	Glu	Asp	Gly	Ser	Met	Asn	Cys
290					295					300					
Arg	Cys	Glu	Asn	Asn	Tyr	Phe	Arg	Ala	Asp	Lys	Asp	Pro	Pro	Ser	Met
305					310					315					320
Ala	Cys	Thr	Arg	Pro	Pro	Ser	Ser	Pro	Arg	Asn	Val	Ile	Ser	Asn	Ile
				325					330					335	
Asn	Glu	Thr	Ser	Val	Ile	Leu	Asp	Trp	Ser	Trp	Pro	Leu	Asp	Thr	Gly
			340				345						350		
Gly	Arg	Lys	Asp	Val	Thr	Phe	Asn	Ile	Ile	Cys	Lys	Lys	Cys	Gly	Trp
		355					360					365			
Asn	Ile	Lys	Gln	Cys	Glu	Pro	Cys	Ser	Pro	Asn	Val	Arg	Phe	Leu	Pro
		370				375					380				
Arg	Gln	Phe	Gly	Leu	Thr	Asn	Thr	Thr	Val	Thr	Val	Thr	Asp	Leu	Leu
				390							395				400
Ala	His	Thr	Asn	Tyr	Thr	Phe	Glu	Ile	Asp	Ala	Val	Asn	Gly	Val	Ser
				405					410					415	
Glu	Leu	Ser	Ser	Pro	Pro	Arg	Gln	Phe	Ala	Ala	Val	Ser	Ile	Thr	Thr
			420				425						430		
Asn	Gln	Ala	Ala	Pro	Ser	Pro	Val	Leu	Thr	Ile	Lys	Lys	Asp	Arg	Thr
		435					440					445			
Ser	Arg	Asn	Ser	Ile	Ser	Leu	Ser	Trp	Gln	Glu	Pro	Glu	His	Pro	Asn
		450				455					460				
Gly	Ile	Ile	Leu	Asp	Tyr	Glu	Val	Lys	Tyr	Tyr	Glu	Lys	Gln	Glu	Gln
				470					475						480
Glu	Thr	Ser	Tyr	Thr	Ile	Leu	Arg	Ala	Arg	Gly	Thr	Asn	Val	Thr	Ile
				485					490					495	
Ser	Ser	Leu	Lys	Pro	Asp	Thr	Ile	Tyr	Val	Phe	Gln	Ile	Arg	Ala	Arg
			500					505					510		
Thr	Ala	Ala	Gly	Tyr	Gly	Thr	Asn	Ser	Arg	Lys	Phe	Glu	Phe	Glu	Thr
			515				520					525			
Ser	Pro	Asp	Ser	Phe	Ser	Ile	Ser	Gly	Glu	Ser	Ser	Gln	Val	Val	Met
			530			535					540				
Ile	Ala	Ile	Ser	Ala	Ala	Val	Ala	Ile	Ile	Leu	Leu	Thr	Val	Val	Ile
				550							555				560
Tyr	Val	Leu	Ile	Gly	Arg	Phe	Cys	Gly	Tyr	Lys	Ser	Lys	His	Gly	Ala
				565					570					575	
Asp	Glu	Lys	Arg	Leu	His	Phe	Gly	Asn	Gly	His	Leu	Lys	Leu	Pro	Gly

580						585						590					
Leu	Arg	Thr	Tyr	Val	Asp	Pro	His	Thr	Tyr	Glu	Asp	Pro	Thr	Gln	Ala		
595						600						605					
Val	His	Glu	Phe	Ala	Lys	Glu	Leu	Asp	Ala	Thr	Asn	Ile	Ser	Ile	Asp		
610						615						620					
Lys	Val	Val	Gly	Ala	Gly	Glu	Phe	Gly	Glu	Val	Cys	Ser	Gly	Arg	Leu		
625						630						635					
Lys	Leu	Pro	Ser	Lys	Lys	Glu	Ile	Ser	Val	Ala	Ile	Lys	Thr	Leu	Lys		
645						650						655					
Val	Gly	Tyr	Thr	Glu	Lys	Gln	Arg	Arg	Asp	Phe	Leu	Gly	Glu	Ala	Ser		
660						665						670					
Ile	Met	Gly	Gln	Phe	Asp	His	Pro	Asn	Ile	Ile	Arg	Leu	Glu	Gly	Val		
675						680						685					
Val	Thr	Lys	Ser	Lys	Pro	Val	Met	Ile	Val	Thr	Glu	Tyr	Met	Glu	Asn		
690						695						700					
Gly	Ser	Leu	Asp	Ser	Phe	Leu	Arg	Lys	His	Asp	Ala	Gln	Phe	Thr	Val		
705						710						715					
Ile	Gln	Leu	Val	Gly	Met	Leu	Arg	Gly	Ile	Ala	Ser	Gly	Met	Lys	Tyr		
725						730						735					
Leu	Ser	Asp	Met	Gly	Tyr	Val	His	Arg	Asp	Leu	Ala	Ala	Arg	Asn	Ile		
740						745						750					
Leu	Ile	Asn	Ser	Asn	Leu	Val	Cys	Lys	Val	Ser	Asp	Phe	Gly	Leu	Ser		
755						760						765					
Arg	Val	Leu	Glu	Asp	Asp	Pro	Glu	Ala	Ala	Tyr	Thr	Thr	Arg	Gly	Gly		
770						775						780					
Lys	Ile	Pro	Ile	Arg	Trp	Thr	Ser	Pro	Glu	Ala	Ile	Ala	Tyr	Arg	Lys		
785						790						795					
Phe	Thr	Ser	Ala	Ser	Asp	Val	Trp	Ser	Tyr	Gly	Ile	Val	Leu	Trp	Glu		
805						810						815					
Val	Met	Ser	Tyr	Gly	Glu	Arg	Pro	Tyr	Trp	Glu	Met	Ser	Asn	Gln	Asp		
820						825						830					
Val	Ile	Lys	Ala	Val	Asp	Glu	Gly	Tyr	Arg	Leu	Pro	Pro	Pro	Met	Asp		
835						840						845					
Cys	Pro	Ala	Ala	Leu	Tyr	Gln	Leu	Met	Leu	Asp	Cys	Trp	Gln	Lys	Asp		
850						855						860					
Arg	Asn	Asn	Arg	Pro	Lys	Phe	Glu	Gln	Ile	Val	Ser	Ile	Leu	Asp	Lys		
865						870						875					
Leu	Ile	Arg	Asn	Pro	Gly	Ser	Leu	Lys	Ile	Ile	Thr	Ser	Ala	Ala	Ala		

				885						890						895
Arg	Pro	Ser	Asn	Leu	Leu	Leu	Asp	Gln	Ser	Asn	Val	Asp	Ile	Ser	Thr	
			900					905					910			
Phe	Arg	Thr	Thr	Gly	Asp	Trp	Leu	Asn	Gly	Val	Arg	Thr	Ala	His	Cys	
		915					920					925				
Lys	Glu	Ile	Phe	Thr	Gly	Val	Glu	Tyr	Ser	Ser	Cys	Asp	Thr	Ile	Ala	
	930					935					940					
Lys	Ile	Ser	Thr	Asp	Asp	Met	Lys	Lys	Val	Gly	Val	Thr	Val	Val	Gly	
945					950					955					960	
Pro	Gln	Lys	Lys	Ile	Ile	Ser	Ser	Ile	Lys	Ala	Leu	Glu	Thr	Gln	Ser	
				965					970					975		
Lys	Asn	Gly	Pro	Val	Pro	Val										
				980												

<210> 60  
 <211> 984  
 <212> PRT  
 <213> Rattus norvegicus

<400> 60

Met	Ala	Leu	Asp	Cys	Leu	Leu	Leu	Phe	Leu	Leu	Ala	Ser	Ala	Val	Ala
1				5					10					15	
Ala	Met	Glu	Glu	Thr	Leu	Met	Asp	Thr	Arg	Thr	Ala	Thr	Ala	Glu	Leu
			20					25					30		
Gly	Trp	Thr	Ala	Asn	Pro	Ala	Ser	Gly	Trp	Glu	Glu	Val	Ser	Gly	Tyr
		35					40					45			
Asp	Glu	Asn	Leu	Asn	Thr	Ile	Arg	Thr	Tyr	Gln	Val	Cys	Asn	Val	Phe
	50					55					60				
Glu	Pro	Asn	Gln	Asn	Asn	Trp	Leu	Leu	Thr	Thr	Phe	Ile	Asn	Arg	Arg
65					70					75					80
Gly	Ala	His	Arg	Ile	Tyr	Thr	Glu	Met	Arg	Phe	Thr	Val	Arg	Asp	Cys
				85					90					95	
Ser	Ser	Leu	Pro	Asn	Val	Pro	Gly	Ser	Cys	Lys	Glu	Thr	Phe	Asn	Leu
			100					105					110		
Tyr	Tyr	Tyr	Glu	Thr	Asp	Ser	Val	Ile	Ala	Thr	Lys	Lys	Ser	Ala	Phe
		115					120					125			
Trp	Ser	Glu	Ala	Pro	Tyr	Leu	Lys	Val	Asp	Thr	Ile	Ala	Ala	Asp	Glu
		130				135					140				
Ser	Phe	Ser	Gln	Val	Asp	Phe	Gly	Gly	Arg	Leu	Met	Lys	Val	Asn	Thr
145					150					155					160

Glu Val Arg Ser Phe Gly Pro Leu Thr Arg Asn Gly Phe Tyr Leu Ala  
 165 170 175  
 Phe Gln Asp Tyr Gly Ala Cys Met Ser Leu Leu Ser Val Arg Val Phe  
 180 185 190  
 Phe Lys Lys Cys Pro Ser Ile Val Gln Asn Phe Ala Val Phe Pro Glu  
 195 200 205  
 Thr Met Thr Gly Ala Glu Ser Thr Ser Leu Val Ile Ala Arg Gly Thr  
 210 215 220  
 Cys Ile Pro Asn Ala Glu Glu Val Asp Val Pro Ile Lys Leu Tyr Cys  
 225 230 235 240  
 Asn Gly Asp Gly Glu Trp Met Val Pro Ile Gly Arg Cys Thr Cys Lys  
 245 250 255  
 Ala Gly Tyr Glu Pro Glu Asn Ser Val Ala Cys Lys Ala Cys Pro Ala  
 260 265 270  
 Gly Thr Phe Lys Ala Ser Gln Glu Ala Glu Gly Cys Ser His Cys Pro  
 275 280 285  
 Ser Asn Ser Arg Ser Pro Ser Glu Ala Ser Pro Ile Cys Thr Cys Arg  
 290 295 300  
 Thr Gly Tyr Tyr Arg Ala Asp Phe Asp Pro Pro Glu Val Ala Cys Thr  
 305 310 315 320  
 Ser Val Pro Ser Gly Pro Arg Asn Val Ile Ser Ile Val Asn Glu Thr  
 325 330 335  
 Ser Ile Ile Leu Glu Trp His Pro Pro Arg Glu Thr Gly Gly Arg Asp  
 340 345 350  
 Asp Val Thr Tyr Asn Ile Ile Cys Lys Lys Cys Arg Ala Asp Arg Arg  
 355 360 365  
 Ser Cys Ser Arg Cys Asp Asp Asn Val Glu Phe Val Pro Arg Gln Leu  
 370 375 380  
 Gly Leu Thr Glu Cys Arg Val Ser Ile Ser Ser Leu Trp Ala His Thr  
 385 390 395 400  
 Pro Tyr Thr Phe Asp Ile Gln Ala Ile Asn Gly Val Ser Ser Lys Ser  
 405 410 415  
 Pro Phe Pro Pro Gln His Val Ser Val Asn Ile Thr Thr Asn Gln Ala  
 420 425 430  
 Ala Pro Ser Thr Val Pro Ile Met His Gln Val Ser Ala Thr Met Arg  
 435 440 445  
 Ser Ile Thr Leu Ser Trp Pro Gln Pro Glu Gln Pro Asn Gly Ile Ile  
 450 455 460

Leu Asp Tyr Glu Ile Arg Tyr Tyr Glu Lys Glu His Asn Glu Phe Asn  
 465 470 475 480  
 Ser Ser Met Ala Arg Ser Gln Thr Asn Thr Ala Arg Ile Asp Gly Leu  
 485 490 495  
 Arg Pro Gly Met Val Tyr Val Val Gln Val Arg Ala Arg Thr Val Ala  
 500 505 510  
 Gly Tyr Gly Lys Phe Ser Gly Lys Met Cys Phe Gln Thr Leu Thr Asp  
 515 520 525  
 Asp Asp Tyr Lys Ser Glu Leu Arg Glu Gln Leu Pro Leu Ile Ala Gly  
 530 535 540  
 Ser Ala Ala Ala Gly Val Val Phe Val Val Ser Leu Val Ala Ile Ser  
 545 550 555 560  
 Ile Val Cys Ser Arg Lys Arg Ala Tyr Ser Lys Glu Ala Val Tyr Ser  
 565 570 575  
 Asp Lys Leu Gln His Tyr Ser Thr Gly Arg Gly Ser Pro Gly Met Lys  
 580 585 590  
 Ile Tyr Ile Asp Pro Phe Thr Tyr Glu Asp Pro Asn Glu Ala Val Arg  
 595 600 605  
 Glu Phe Ala Lys Glu Ile Asp Val Ser Phe Val Lys Ile Glu Glu Val  
 610 615 620  
 Ile Gly Ala Gly Glu Phe Gly Glu Val Tyr Lys Gly Arg Leu Lys Leu  
 625 630 635 640  
 Pro Gly Lys Arg Glu Ile Tyr Val Ala Ile Lys Thr Leu Lys Ala Gly  
 645 650 655  
 Tyr Ser Glu Lys Gln Arg Arg Asp Phe Leu Ser Glu Ala Ser Ile Met  
 660 665 670  
 Gly Gln Phe Asp His Pro Asn Ile Ile Arg Leu Glu Gly Val Val Thr  
 675 680 685  
 Lys Ser Arg Pro Val Met Ile Ile Thr Glu Phe Met Glu Asn Gly Ala  
 690 695 700  
 Leu Asp Ser Phe Leu Arg Gln Asn Asp Gly Gln Phe Thr Val Ile Gln  
 705 710 715 720  
 Leu Val Gly Met Leu Arg Gly Ile Ala Ala Gly Met Lys Tyr Leu Ser  
 725 730 735  
 Glu Met Asn Tyr Val His Arg Asp Leu Ala Ala Arg Asn Ile Leu Val  
 740 745 750  
 Asn Ser Asn Leu Val Cys Lys Val Ser Asp Phe Gly Leu Ser Arg Tyr  
 755 760 765



Leu Gln Asp Asp Thr Ser Asp Pro Thr Tyr Thr Ser Ser Leu Gly Gly  
 770 775 780  
 Lys Ile Pro Val Arg Trp Thr Ala Pro Glu Ala Ile Ala Tyr Arg Lys  
 785 790 795 800  
 Phe Thr Ser Ala Ser Asp Val Trp Ser Tyr Gly Ile Val Met Trp Glu  
 805 810 815  
 Val Met Ser Phe Gly Glu Arg Pro Tyr Trp Asp Met Ser Asn Gln Asp  
 820 825 830  
 Val Ile Asn Ala Ile Glu Gln Asp Tyr Arg Leu Pro Pro Pro Met Asp  
 835 840 845  
 Cys Pro Ala Ala Leu His Gln Leu Met Leu Asp Cys Trp Gln Lys Asp  
 850 855 860  
 Arg Asn Ser Arg Pro Arg Phe Ala Glu Ile Val Asn Thr Leu Asp Lys  
 865 870 875 880  
 Met Ile Arg Asn Pro Ala Ser Leu Lys Thr Val Ala Thr Ile Thr Ala  
 885 890 895  
 Val Pro Ser Gln Pro Leu Leu Asp Arg Ser Ile Pro Asp Phe Thr Ala  
 900 905 910  
 Phe Thr Thr Val Asp Asp Trp Leu Ser Ala Ile Lys Met Val Gln Tyr  
 915 920 925  
 Arg Asp Ser Phe Leu Thr Ala Gly Phe Thr Ser Leu Gln Leu Val Thr  
 930 935 940  
 Gln Met Thr Ser Glu Asp Leu Leu Arg Ile Gly Val Thr Leu Ala Gly  
 945 950 955 960  
 His Gln Lys Lys Ile Leu Ser Ser Ile His Ser Met Arg Val Gln Met  
 965 970 975  
 Asn Gln Ser Pro Ser Val Met Ala-  
 980

<210> 61  
 <211> 985  
 <212> PRT  
 <213> *Xenopus laevis*

<400> 61  
 Met Ala Gly Ile Val His Gly Ile Leu Phe Cys Gly Leu Phe Gly Leu  
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 Cys Trp Ala Val Thr Gly Ser Arg Ile Tyr Pro Ala Ser Glu Val Thr  
 20 25 30  
 Leu Leu Asp Ser Arg Ser Val Gln Gly Glu Leu Gly Trp Ile Ala Ser  
 35 40 45

Pro	Leu	Glu	Gly	Gly	Trp	Glu	Glu	Val	Ser	Ile	Met	Asp	Glu	Lys	Asn		
	50					55					60						
Thr	Pro	Ile	Arg	Thr	Tyr	Gln	Val	Cys	Asn	Val	Met	Glu	Ser	Ser	Gln		
	65				70					75					80		
Asn	Asn	Trp	Leu	Arg	Thr	Asp	Trp	Ile	Pro	Arg	Ser	Gly	Ala	Gln	Arg		
			85						90					95			
Val	Tyr	Val	Glu	Ile	Lys	Phe	Thr	Leu	Arg	Asp	Cys	Asn	Ser	Leu	Pro		
			100					105					110				
Gly	Val	Met	Gly	Thr	Cys	Lys	Glu	Thr	Phe	Asn	Leu	Tyr	Tyr	Tyr	Glu		
		115					120					125					
Ser	Asn	Asn	Asp	Lys	Glu	Arg	Phe	Ile	Arg	Glu	Thr	Gln	Tyr	Val	Lys		
	130					135					140						
Ile	Asp	Thr	Ile	Ala	Ala	Asp	Glu	Ser	Phe	Thr	Gln	Val	Asp	Ile	Gly		
	145				150					155					160		
Asp	Arg	Ile	Met	Lys	Leu	Asn	Thr	Glu	Val	Arg	Asp	Val	Gly	Pro	Leu		
			165						170					175			
Ser	Lys	Lys	Gly	Phe	Tyr	Leu	Ala	Phe	Gln	Asp	Val	Gly	Ala	Cys	Ile		
			180					185					190				
Ala	Leu	Val	Ser	Val	Arg	Val	Phe	Tyr	Lys	Lys	Cys	Pro	Leu	Thr	Val		
		195					200					205					
Arg	Asn	Leu	Ala	Gln	Phe	Pro	Asp	Thr	Ile	Thr	Gly	Ser	Asp	Thr	Ser		
	210					215					220						
Ser	Leu	Val	Glu	Val	Arg	Gly	Ser	Cys	Val	Asp	Asn	Ser	Glu	Glu	Lys		
	225				230					235					240		
Asp	Val	Pro	Lys	Met	Tyr	Cys	Gly	Ala	Asp	Gly	Glu	Trp	Leu	Val	Pro		
			245						250				255				
Ile	Gly	Asn	Cys	Leu	Cys	Asn	Ala	Gly	Phe	Glu	Glu	His	Asn	Gly	Gly		
		260						265					270				
Cys	Gln	Ala	Cys	Lys	Val	Gly	Tyr	Tyr	Lys	Ala	Leu	Ser	Thr	Asp	Ala		
	275						280				285						
Ala	Cys	Ser	Lys	Cys	Pro	Pro	His	Ser	Tyr	Ala	Leu	Arg	Glu	Gly	Ser		
	290					295					300						
Thr	Ser	Cys	Thr	Cys	Asp	Arg	Gly	Tyr	Phe	Arg	Ala	Asp	Thr	Asp	Pro		
	305				310					315					320		
Ala	Ser	Met	Pro	Cys	Thr	Arg	Pro	Pro	Ser	Ala	Pro	Gln	Asn	Leu	Ile		
			325						330					335			
Ser	Asn	Val	Asn	Glu	Thr	Ser	Val	Asn	Leu	Glu	Trp	Ser	Pro	Pro	Gln		
		340						345					350				

Asn	Ser	Gly	Gly	Arg	Pro	Asp	Val	Ser	Tyr	Asn	Leu	Val	Cys	Lys	Arg	
		355					360					365				
Cys	Gly	Ser	Asp	Leu	Thr	Arg	Cys	Ser	Pro	Cys	Gly	Ser	Gly	Val	His	
	370					375					380					
Tyr	Ser	Pro	Gln	Gln	Asn	Gly	Leu	Lys	Thr	Thr	Lys	Val	Ser	Ile	Asn	
385					390					395					400	
Asp	Leu	Gln	Ala	His	Thr	Asn	Tyr	Thr	Phe	Glu	Val	Trp	Ala	Ile	Asn	
				405					410					415		
Gly	Val	Ser	Lys	Gln	Asn	Pro	Glu	Gln	Asp	Gln	Ala	Val	Ser	Val	Thr	
			420					425					430			
Val	Thr	Thr	Asn	Gln	Ala	Ala	Pro	Ser	Thr	Val	Thr	Gln	Ile	Gln	Pro	
		435					440					445				
Lys	Glu	Ile	Thr	Arg	His	Ser	Val	Ser	Leu	Thr	Trp	Pro	Glu	Pro	Glu	
	450					455					460					
Arg	Ala	Asn	Gly	Val	Ile	Leu	Glu	Tyr	Glu	Val	Lys	Tyr	Tyr	Glu	Lys	
465					470					475					480	
Asp	Gln	Asn	Glu	Arg	Ser	Tyr	Arg	Ile	Val	Lys	Thr	Ala	Ser	Arg	Ser	
				485					490					495		
Ala	Asp	Ile	Lys	Gly	Leu	Asn	Pro	Leu	Thr	Gly	Tyr	Val	Phe	His	Val	
			500					505					510			
Arg	Ala	Arg	Thr	Ala	Ala	Gly	Tyr	Gly	Glu	Phe	Ser	Gly	Pro	Phe	Glu	
		515					520					525				
Phe	Thr	Thr	Asn	Thr	Val	Pro	Ser	Pro	Met	Ile	Gly	Glu	Gly	Thr	Ser	
	530					535					540					
Pro	Thr	Val	Leu	Leu	Val	Ser	Val	Ala	Gly	Ser	Ile	Val	Leu	Val	Val	
545					550					555					560	
Ile	Leu	Ile	Ala	Ala	Phe	Val	Ile	Ser	Arg	Arg	Arg	Ser	Lys	Tyr	Ser	
				565					570					575		
Lys	Ala	Lys	Gln	Glu	Ala	Asp	Glu	Glu	Lys	His	Leu	Asn	Gln	Gly	Val	
			580					585					590			
Lys	Thr	Tyr	Val	Asp	Pro	Phe	Thr	Tyr	Glu	Asp	Pro	Asn	Gln	Ala	Val	
		595					600					605				
Arg	Glu	Phe	Ala	Lys	Glu	Ile	Asp	Ala	Ser	Cys	Ile	Lys	Ile	Glu	Lys	
	610					615					620					
Val	Ile	Gly	Val	Gly	Glu	Phe	Gly	Glu	Val	Cys	Ser	Gly	Arg	Leu	Lys	
625					630					635					640	
Val	Pro	Gly	Lys	Arg	Glu	Ile	Tyr	Val	Ala	Ile	Lys	Thr	Leu	Lys	Ala	
				645					650					655		

Gly Tyr Thr Asp Lys Gln Arg Arg Asp Phe Leu Ser Glu Ala Ser Ile  
 660 665 670  
 Met Gly Gln Phe Asp His Pro Asn Ile Ile His Leu Glu Gly Val Val  
 675 680 685  
 Thr Lys Cys Lys Pro Val Met Ile Ile Thr Glu Tyr Met Glu Asn Gly  
 690 695 700  
 Ser Leu Asp Ala Phe Leu Arg Lys Asn Asp Gly Arg Phe Thr Val Ile  
 705 710 715 720  
 Gln Leu Val Gly Met Leu Arg Gly Ile Gly Ser Gly Met Lys Tyr Leu  
 725 730 735  
 Ser Asp Met Ser Tyr Val His Arg Asp Leu Ala Ala Arg Asn Ile Leu  
 740 745 750  
 Val Asn Ser Asn Leu Val Cys Lys Val Ser Asp Phe Gly Met Ser Arg  
 755 760 765  
 Val Leu Glu Asp Asp Pro Glu Ala Ala Tyr Thr Thr Arg Gly Gly Lys  
 770 775 780  
 Ile Pro Ile Arg Trp Thr Ala Pro Glu Ala Ile Ala Tyr Arg Lys Phe  
 785 790 795 800  
 Thr Ser Ala Ser Asp Val Trp Ser Tyr Gly Ile Val Met Trp Glu Val  
 805 810 815  
 Met Ser Tyr Gly Glu Arg Pro Tyr Trp Asp Met Ser Asn Gln Asp Val  
 820 825 830  
 Ile Lys Ala Ile Glu Glu Gly Tyr Arg Leu Pro Pro Pro Met Asp Cys  
 835 840 845  
 Pro Ile Ala Leu His Gln Leu Met Leu Asp Cys Trp Gln Lys Asp Arg  
 850 855 860  
 Ser Asp Arg Pro Lys Phe Gly Gln Ile Val Ser Met Leu Asp Lys Leu  
 865 870 875 880  
 Ile Arg Asn Pro Asn Ser Leu Lys Arg Thr Gly Leu Glu Asn Ser Arg  
 885 890 895  
 Thr Asn Thr Ala Leu Leu Asp Pro Ser Ser Pro Glu Trp Ser Gln Val  
 900 905 910  
 Ala Ser Val Leu Asp Trp Leu Gln Ala Ser Lys Trp Lys Arg Tyr Lys  
 915 920 925  
 Asp Asn Phe Thr Ala Ala Gly Tyr Thr Ser Leu Glu Ala Val Val His  
 930 935 940  
 Val Asn Gln Asp Asp Leu Thr Arg Ile Gly Ile Ser Ser Pro Ser His  
 945 950 955 960

Gln Asn Lys Ile Leu Ser Ser Val Gln Gly Met Arg Thr Gln Leu Gln  
965 970 975

Gln Met Gln Gly Arg Met Val Pro Val  
980 985

<210> 62  
<211> 995  
<212> PRT  
<213> Gallus gallus

<400> 62  
Met Pro Gly Pro Glu Arg Thr Met Gly Pro Leu Trp Phe Cys Cys Leu  
1 5 10 15

Pro Leu Ala Leu Leu Pro Leu Leu Ala Ala Val Glu Glu Thr Leu Met  
20 25 30

Asp Ser Thr Thr Ala Thr Ala Glu Leu Gly Trp Met Val His Pro Pro  
35 40 45

Ser Gly Trp Glu Glu Val Ser Gly Tyr Asp Glu Asn Met Asn Thr Ile  
50 55 60

Arg Thr Tyr Gln Val Cys Asn Val Phe Glu Ser Ser Gln Asn Asn Trp  
65 70 75 80

Leu Arg Thr Lys Tyr Ile Arg Arg Arg Gly Ala His Arg Ile His Val  
85 90 95

Glu Met Lys Phe Ser Val Arg Asp Cys Ser Ser Ile Pro Asn Val Pro  
100 105 110

Gly Ser Cys Lys Glu Thr Phe Asn Leu Tyr Tyr Tyr Glu Ser Asp Phe  
115 120 125

Asp Ser Ala Thr Lys Thr Phe Pro Asn Trp Met Glu Asn Pro Trp Met  
130 135 140

Lys Val Asp Thr Ile Ala Ala Asp Glu Ser Phe Ser Gln Val Asp Leu  
145 150 155 160

Gly Gly Arg Val Met Lys Ile Asn Thr Glu Val Arg Ser Phe Gly Pro  
165 170 175

Val Ser Lys Asn Gly Phe Tyr Leu Ala Phe Gln Asp Tyr Gly Gly Cys  
180 185 190

Met Ser Leu Ile Ala Val Arg Val Phe Tyr Arg Lys Cys Pro Arg Val  
195 200 205

Ile Gln Asn Gly Ala Val Phe Gln Glu Thr Leu Ser Gly Ala Glu Ser  
210 215 220

Thr Ser Leu Val Ala Ala Arg Gly Thr Cys Ile Ser Asn Ala Glu Glu

225		230		235		240
Val Asp Val Pro Ile Lys Leu Tyr Cys Asn Gly Asp Gly Glu Trp Leu						
		245		250		255
Val Pro Ile Gly Arg Cys Met Cys Arg Pro Gly Tyr Glu Ser Val Glu						
		260		265		270
Asn Gly Thr Val Cys Arg Gly Cys Pro Ser Gly Thr Phe Lys Ala Ser						
		275		280		285
Gln Gly Asp Glu Gly Cys Val His Cys Pro Ile Asn Ser Arg Thr Thr						
		290		295		300
Ser Glu Gly Ala Thr Asn Cys Val Cys Arg Asn Gly Tyr Tyr Arg Ala						
305		310		315		320
Asp Ala Asp Pro Val Asp Met Pro Cys Thr Thr Ile Pro Ser Ala Pro						
		325		330		335
Gln Ala Val Ile Ser Ser Val Asn Glu Thr Ser Leu Met Leu Glu Trp						
		340		345		350
Thr Pro Pro Arg Asp Ser Gly Gly Arg Glu Asp Leu Val Tyr Asn Ile						
		355		360		365
Ile Cys Lys Ser Cys Gly Ser Gly Arg Gly Ala Cys Thr Arg Cys Gly						
		370		375		380
Asp Asn Val Gln Phe Ala Pro Arg Gln Leu Gly Leu Thr Glu Pro Arg						
385		390		395		400
Ile Tyr Ile Ser Asp Leu Leu Ala His Thr Gln Tyr Thr Phe Glu Ile						
		405		410		415
Gln Ala Val Asn Gly Val Thr Asp Gln Ser Pro Phe Ser Pro Gln Phe						
		420		425		430
Ala Ser Val Asn Ile Thr Thr Asn Gln Ala Ala Pro Ser Ala Val Ser						
		435		440		445
Ile Met His Gln Val Ser Arg Thr Val Asp Ser Ile Thr Leu Ser Trp						
		450		455		460
Ser Gln Pro Asp Gln Pro Asn Gly Val Ile Leu Asp Tyr Glu Leu Gln						
465		470		475		480
Tyr Tyr Glu Lys Asn Leu Ser Glu Leu Asn Ser Thr Ala Val Lys Ser						
		485		490		495
Pro Thr Asn Thr Val Thr Val Gln Asn Leu Lys Ala Gly Thr Ile Tyr						
		500		505		510
Val Phe Gln Val Arg Ala Arg Thr Val Ala Gly Tyr Gly Arg Tyr Ser						
		515		520		525
Gly Lys Met Tyr Phe Gln Thr Met Thr Glu Ala Glu Tyr Gln Thr Ser						

530	535	540
Val Gln Glu Lys Leu Pro Leu Ile Ile Gly Ser Ser Ala Ala Gly Leu 545 550 555 560		
Val Phe Leu Ile Ala Val Val Val Ile Ile Ile Val Cys Asn Arg Arg 565 570 575		
Arg Gly Phe Glu Arg Ala Asp Ser Glu Tyr Thr Asp Lys Leu Gln His 580 585 590		
Tyr Thr Ser Gly His Met Thr Pro Gly Met Lys Ile Tyr Ile Asp Pro 595 600 605		
Phe Thr Tyr Glu Asp Pro Asn Glu Ala Val Arg Glu Phe Ala Lys Glu 610 615 620		
Ile Asp Ile Ser Cys Val Lys Ile Glu Gln Val Ile Gly Ala Gly Glu 625 630 635 640		
Phe Gly Glu Val Cys Ser Gly His Leu Lys Leu Pro Gly Lys Arg Glu 645 650 655		
Ile Phe Val Ala Ile Lys Thr Leu Lys Ser Gly Tyr Thr Glu Lys Gln 660 665 670		
Arg Arg Asp Phe Leu Ser Glu Ala Ser Ile Met Gly Gln Phe Asp His 675 680 685		
Pro Asn Val Ile His Leu Glu Gly Val Val Thr Lys Ser Ser Pro Val 690 695 700		
Met Ile Ile Thr Glu Phe Met Glu Asn Gly Ser Leu Asp Ser Phe Leu 705 710 715 720		
Arg Gln Asn Asp Gly Gln Phe Thr Val Ile Gln Leu Val Gly Met Leu 725 730 735		
Arg Gly Ile Ala Ala Gly Met Lys Tyr Leu Ala Asp Met Asn Tyr Val 740 745 750		
His Arg Asp Leu Ala Ala Arg Asn Ile Leu Val Asn Ser Asn Leu Val 755 760 765		
Cys Lys Val Ser Asp Phe Gly Leu Ser Arg Phe Leu Glu Asp Asp Thr 770 775 780		
Ser Asp Pro Thr Tyr Thr Ser Ala Leu Gly Gly Lys Ile Pro Ile Arg 785 790 795 800		
Trp Thr Ala Pro Glu Ala Ile Gln Tyr Arg Lys Phe Thr Ser Ala Ser 805 810 815		
Asp Val Trp Ser Tyr Gly Ile Val Met Trp Glu Val Met Ser Tyr Gly 820 825 830		
Glu Arg Pro Tyr Trp Asp Met Thr Asn Gln Asp Val Ile Asn Ala Ile		

835					840					845						
Glu	Gln	Asp	Tyr	Arg	Leu	Pro	Pro	Pro	Met	Asp	Cys	Pro	Asn	Ala	Leu	
850					855					860						
His	Gln	Leu	Met	Leu	Asp	Cys	Trp	Gln	Lys	Asp	Arg	Asn	His	Arg	Pro	
865					870					875					880	
Lys	Phe	Gly	Gln	Ile	Val	Asn	Thr	Leu	Asp	Lys	Met	Ile	Arg	Asn	Pro	
885					890					895						
Asn	Ser	Leu	Lys	Ala	Met	Ala	Pro	Leu	Ser	Ser	Gly	Val	Asn	Leu	Pro	
900					905					910						
Leu	Leu	Asp	Arg	Thr	Ile	Pro	Asp	Tyr	Thr	Ser	Phe	Asn	Thr	Val	Asp	
915					920					925						
Glu	Trp	Leu	Asp	Ala	Ile	Lys	Met	Ser	Gln	Tyr	Lys	Glu	Ser	Phe	Ala	
930					935					940						
Ser	Ala	Gly	Phe	Thr	Thr	Phe	Asp	Ile	Val	Ser	Gln	Met	Thr	Val	Glu	
945					950					955					960	
Asp	Ile	Leu	Arg	Val	Gly	Val	Thr	Leu	Ala	Gly	His	Gln	Lys	Lys	Ile	
965					970					975						
Leu	Asn	Ser	Ile	Gln	Val	Met	Arg	Ala	Gln	Met	Asn	Gln	Ile	Gln	Ser	
980					985					990						
Val	Glu	Val														
995																

<210> 63  
 <211> 1005  
 <212> PRT  
 <213> Rattus norvegicus

<400> 63  
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 Arg Gly Gly Gly Gly Asp Thr Pro Arg Val Pro Ala Ser Leu Ala Gly  
 20 25 30  
 Cys Tyr Ser Ala Pro Leu Lys Gly Pro Leu Trp Thr Cys Leu Leu Leu  
 35 40 45  
 Cys Ala Ala Leu Arg Thr Leu Leu Ala Ser Pro Ser Asn Glu Val Asn  
 50 55 60  
 Leu Leu Asp Ser Arg Thr Val Leu Gly Asp Leu Gly Trp Ile Ala Phe  
 65 70 75 80  
 Pro Lys Asn Gly Trp Glu Glu Ile Gly Glu Val Asp Glu Asn Tyr Ala  
 85 90 95



Pro	Ile	His	Thr	Tyr	Gln	Val	Cys	Lys	Val	Met	Glu	Gln	Asn	Gln	Asn		
			100					105					110				
Asn	Trp	Leu	Leu	Thr	Ser	Trp	Ile	Ser	Asn	Glu	Gly	Ala	Ser	Arg	Ile		
		115					120					125					
Phe	Ile	Glu	Leu	Lys	Phe	Thr	Leu	Arg	Asp	Cys	Asn	Ser	Leu	Pro	Gly		
	130					135					140						
Gly	Leu	Gly	Thr	Cys	Lys	Glu	Thr	Phe	Asn	Met	Tyr	Tyr	Phe	Glu	Ser		
145					150					155					160		
Asp	Asp	Glu	Asn	Gly	Arg	Asn	Ile	Lys	Asp	Asn	Gln	Tyr	Ile	Lys	Ile		
			165						170					175			
Asp	Thr	Ile	Ala	Ala	Asp	Glu	Ser	Phe	Thr	Glu	Leu	Asp	Leu	Gly	Asp		
			180					185					190				
Arg	Val	Met	Lys	Leu	Asn	Thr	Glu	Val	Arg	Asp	Val	Gly	Pro	Leu	Ser		
		195					200					205					
Lys	Lys	Gly	Phe	Tyr	Leu	Ala	Phe	Gln	Asp	Val	Gly	Ala	Cys	Ile	Ala		
	210					215					220						
Leu	Val	Ser	Val	Arg	Val	Tyr	Tyr	Lys	Lys	Cys	Pro	Ser	Val	Val	Arg		
225					230					235					240		
His	Leu	Ala	Val	Phe	Pro	Asp	Thr	Ile	Thr	Gly	Ala	Asp	Ser	Ser	Gln		
			245						250					255			
Leu	Leu	Glu	Val	Ser	Gly	Ser	Cys	Val	Asn	His	Ser	Val	Thr	Asp	Asp		
			260					265					270				
Pro	Pro	Lys	Met	His	Cys	Ser	Ala	Glu	Gly	Glu	Trp	Leu	Val	Pro	Ile		
		275					280					285					
Gly	Lys	Cys	Met	Cys	Lys	Ala	Gly	Tyr	Glu	Glu	Lys	Asn	Gly	Thr	Cys		
	290					295					300						
Gln	Val	Cys	Arg	Pro	Gly	Phe	Phe	Lys	Ala	Ser	Pro	His	Ser	Gln	Thr		
305					310					315					320		
Cys	Ser	Lys	Cys	Pro	Pro	His	Ser	Tyr	Thr	His	Glu	Glu	Ala	Ser	Thr		
				325					330					335			
Ser	Cys	Val	Cys	Glu	Lys	Asp	Tyr	Phe	Arg	Arg	Glu	Ser	Asp	Pro	Pro		
			340					345					350				
Thr	Met	Ala	Cys	Thr	Arg	Pro	Pro	Ser	Ala	Pro	Arg	Asn	Ala	Ile	Ser		
		355					360					365					
Asn	Val	Asn	Glu	Thr	Ser	Val	Phe	Leu	Glu	Trp	Ile	Pro	Pro	Ala	Asp		
	370					375					380						
Thr	Gly	Gly	Gly	Lys	Asp	Val	Ser	Tyr	Tyr	Ile	Leu	Cys	Lys	Lys	Cys		
385					390					395					400		

Asn Ser His Ala Gly Val Cys Glu Glu Cys Gly Gly His Val Arg Tyr  
 405 410 415  
 Leu Pro Gln Gln Ile Gly Leu Lys Asn Thr Ser Val Met Met Ala Asp  
 420 425 430  
 Pro Leu Ala His Thr Asn Tyr Thr Phe Glu Ile Glu Ala Val Asn Gly  
 435 440 445  
 Val Ser Asp Leu Ser Pro Gly Thr Arg Gln Tyr Val Ser Val Asn Val  
 450 455 460  
 Thr Thr Asn Gln Ala Ala Pro Ser Pro Val Thr Asn Val Lys Lys Gly  
 465 470 475 480  
 Lys Ile Ala Lys Asn Ser Ile Ser Leu Ser Trp Gln Glu Pro Asp Arg  
 485 490 495  
 Pro Asn Gly Ile Ile Leu Glu Tyr Glu Ile Lys Tyr Phe Glu Lys Asp  
 500 505 510  
 Gln Glu Thr Ser Tyr Thr Ile Ile Lys Ser Lys Glu Thr Thr Ile Thr  
 515 520 525  
 Ala Glu Gly Leu Lys Pro Ala Ser Val Tyr Val Phe Gln Ile Arg Ala  
 530 535 540  
 Arg Thr Ala Ala Gly Tyr Gly Val Phe Ser Arg Arg Phe Glu Phe Glu  
 545 550 555 560  
 Thr Thr Pro Val Phe Gly Ala Ser Asn Asp Gln Ser Gln Ile Pro Ile  
 565 570 575  
 Ile Gly Val Ser Val Thr Val Gly Val Ile Leu Leu Ala Val Met Ile  
 580 585 590  
 Gly Phe Leu Leu Ser Gly Ser Cys Cys Glu Cys Gly Cys Gly Arg Ala  
 595 600 605  
 Ser Ser Leu Cys Ala Val Ala His Pro Ser Leu Ile Trp Arg Cys Gly  
 610 615 620  
 Tyr Ser Lys Ala Lys Gln Asp Pro Glu Glu Glu Lys Met His Phe His  
 625 630 635 640  
 Asn Gly His Ile Lys Leu Pro Gly Val Arg Thr Tyr Ile Asp Pro His  
 645 650 655  
 Thr Tyr Glu Asp Pro Thr Gln Ala Val His Glu Phe Gly Lys Glu Ile  
 660 665 670  
 Glu Ala Ser Cys Ile Thr Ile Glu Arg Val Ile Gly Ala Gly Glu Phe  
 675 680 685  
 Gly Glu Val Cys Ser Gly Arg Leu Lys Leu Pro Gly Lys Arg Glu Leu  
 690 695 700

Pro	Val	Ala	Thr	Lys	Thr	Leu	Lys	Val	Gly	Tyr	Thr	Glu	Lys	Gln	Arg	705	710	715				720
Arg	Asp	Phe	Leu	Ser	Glu	Ala	Ser	Ile	Met	Gly	Gln	Phe	Asp	His	Pro		725	730				735
Asn	Ile	Ile	His	Leu	Glu	Gly	Val	Val	Thr	Lys	Ser	Lys	Pro	Val	Met		740	745				750
Ile	Val	Thr	Glu	Tyr	Met	Glu	Asn	Gly	Ser	Leu	Asp	Thr	Phe	Leu	Lys		755	760				765
Lys	Asn	Asp	Gly	Gln	Phe	Thr	Val	Ile	Gln	Leu	Val	Gly	Met	Leu	Arg		770	775				780
Gly	Ile	Ala	Ala	Gly	Met	Lys	Tyr	Leu	Ser	Asp	Met	Gly	Tyr	Val	His		785	790				800
Arg	Asp	Leu	Ala	Ala	Arg	Asn	Ile	Leu	Ile	Asn	Ser	Asn	Leu	Val	Cys		805	810				815
Lys	Val	Ser	Asp	Phe	Gly	Leu	Ser	Arg	Val	Leu	Glu	Asp	Asp	Pro	Glu		820	825				830
Ala	Ala	Tyr	Thr	Thr	Arg	Gly	Gly	Lys	Ile	Pro	Ile	Arg	Trp	Thr	Ala		835	840				845
Pro	Glu	Ala	Ile	Ala	Phe	Arg	Lys	Phe	Thr	Ser	Ala	Ser	Asp	Val	Trp		850	855				860
Ser	Tyr	Gly	Ile	Val	Met	Trp	Glu	Val	Val	Ser	Tyr	Gly	Glu	Arg	Pro		865	870				875
Tyr	Trp	Glu	Met	Thr	Asn	Gln	Asp	Val	Ile	Lys	Ala	Val	Glu	Glu	Gly		885	890				895
Tyr	Arg	Leu	Pro	Ser	Pro	Met	Asp	Cys	Pro	Ala	Ala	Leu	Tyr	Gln	Leu		900	905				910
Met	Leu	Asp	Cys	Trp	Gln	Lys	Asp	Arg	Asn	Ser	Arg	Pro	Lys	Phe	Asp		915	920				925
Asp	Ile	Val	Asn	Met	Leu	Asp	Lys	Leu	Ile	Arg	Asn	Pro	Ser	Ser	Leu		930	935				940
Lys	Thr	Leu	Val	Asn	Ala	Ser	Ser	Arg	Val	Ser	Thr	Leu	Leu	Ala	Glu		945	950				955
His	Gly	Ser	Leu	Gly	Ser	Gly	Ala	Tyr	Arg	Ser	Val	Gly	Glu	Trp	Leu		965	970				975
Glu	Ala	Thr	Lys	Met	Gly	Arg	Tyr	Thr	Glu	Ile	Phe	Met	Glu	Asn	Gly		980	985				990
Tyr	Ser	Ser	Met	Asp	Ala	Val	Ala	Gln	Val	Thr	Leu	Glu					995	1000				1005

<210> 64  
 <211> 524  
 <212> PRT  
 <213> Homo sapiens

<400> 64  
 Met Glu Asn Lys Glu Ala Gly Thr Pro Pro Pro Ile Pro Ser Arg Glu  
   1                  5                  10                  15  
 Gly Arg Leu Gln Pro Thr Leu Leu Leu Ala Thr Leu Ser Ala Ala Phe  
                   20                  25                  30  
 Gly Ser Ala Phe Gln Tyr Gly Tyr Asn Leu Ser Val Val Asn Thr Pro  
           35                  40                  45  
 His Lys Val Gly Thr Ser Cys Gly Trp Gly Asn Val Phe Gln Val Phe  
       50                  55                  60  
 Lys Ser Phe Tyr Asn Glu Thr Tyr Phe Glu Arg His Ala Thr Phe Met  
   65                  70                  75                  80  
 Asp Gly Lys Leu Met Leu Leu Leu Trp Ser Cys Thr Val Ser Met Phe  
                   85                  90                  95  
 Pro Leu Gly Gly Leu Leu Gly Ser Leu Leu Val Gly Leu Leu Val Asp  
           100                  105                  110  
 Ser Cys Gly Arg Lys Gly Thr Leu Leu Ile Asn Asn Ile Phe Ala Ile  
       115                  120                  125  
 Ile Pro Ala Ile Leu Met Gly Val Ser Lys Val Ala Lys Ala Phe Glu  
   130                  135                  140  
 Leu Ile Val Phe Ser Arg Val Val Leu Gly Val Cys Ala Gly Ile Ser  
  145                  150                  155                  160  
 Tyr Ser Ala Leu Pro Met Tyr Leu Gly Glu Leu Ala Pro Lys Asn Leu  
           165                  170                  175  
 Arg Gly Met Val Gly Thr Met Thr Glu Val Phe Val Ile Val Gly Val  
       180                  185                  190  
 Phe Leu Ala Gln Ile Phe Ser Leu Gln Ala Ile Leu Gly Asn Pro Ala  
   195                  200                  205  
 Gly Trp Pro Val Leu Leu Ala Leu Thr Gly Val Pro Ala Leu Leu Gln  
   210                  215                  220  
 Leu Leu Thr Leu Pro Phe Phe Pro Glu Ser Pro Arg Tyr Ser Leu Ile  
  225                  230                  235                  240  
 Gln Lys Gly Asp Glu Ala Thr Ala Arg Gln Ala Leu Arg Arg Leu Arg  
           245                  250                  255  
 Gly His Thr Asp Met Glu Ala Glu Leu Glu Asp Met Arg Ala Glu Ala  
       260                  265                  270

Arg Ala Gln Arg Ala Gln Gly His Leu Ser Val Leu His Leu Cys Ala  
275 280 285

Leu Arg Ser Leu Arg Trp Gln Leu Leu Ser Ile Val Leu Met Ala  
290 295 300

Gly Gln Gln Leu Ser Gly Ile Asn Ala Ile Asn Tyr Tyr Ala Asp Thr  
305 310 315 320

Ile Tyr Thr Ser Ala Gly Val Gln Ala His Ser Gln Tyr Val Thr  
325 330 335

Val Gly Ser Gly Val Val Asn Ile Val Met Thr Ile Thr Ser Ala Val  
340 345 350

Leu Val Gln Arg Leu Gly Arg Arg His Leu Leu Ala Gly Tyr Gly  
355 360 365

Ile Cys Gly Ser Ala Cys Leu Val Leu Thr Val Val Leu Phe Gln  
370 375 380

Asn Arg Val Pro Gln Leu Ser Tyr Leu Gly Ile Ile Cys Val Phe Ala  
385 390 395 400

Tyr Ile Ala Gly His Ser Ile Gly Pro Ser Pro Val Pro Ser Val Val  
405 410 415

Arg Thr Gln Ile Phe Leu Gln Ser Ser Arg Arg Ala Ala Phe Met Val  
420 425 430

Asp Gly Ala Val His Trp Leu Thr Asn Phe Ile Ile Gly Phe Leu Phe  
435 440 445

Pro Ser Ile Gln Gln Ala Ile Gly Ala Tyr Ser Phe Ile Ile Phe Ala  
450 455 460

Gly Ile Cys Leu Leu Thr Ala Ile Tyr Ile Tyr Val Val Ile Pro Gln  
465 470 475 480

Thr Lys Gly Lys Thr Phe Val Gln Ile Asn Arg Ile Phe Ala Lys Arg  
485 490 495

Asn Arg Val Lys Leu Pro Gln Gln Lys Gln Gln Thr Ile Asp Ala Gly  
500 505 510

Pro Pro Thr Ala Ser Pro Ala Lys Gln Thr Ser Phe  
515 520

<210> 65

<211> 502

<212> PRT

<213> Rattus norvegicus

<400> 65

Met Gln Lys Gln Asp Gln Gln Lys Thr Gly Lys Leu Thr Leu Val Leu

1	5	10	15
Ala Leu Ala Thr Phe Leu Ala Ala Phe Gly Ser Ser Phe Gln Tyr Gly	20	25	30
Tyr Asn Val Ala Ala Val Asn Ser Pro Ser Glu Phe Met Gln Gln Phe	35	40	45
Tyr Asn Asp Thr Tyr Tyr Asp Arg Asn Lys Glu Asn Ile Glu Ser Phe	50	55	60
Thr Leu Thr Leu Leu Trp Ser Leu Thr Val Ser Met Phe Pro Phe Gly	65	70	75
Gly Phe Ile Gly Ser Leu Met Val Gly Phe Leu Val Asn Asn Leu Gly	85	90	95
Arg Lys Gly Ala Leu Leu Phe Asn Asn Ile Phe Ser Ile Leu Pro Ala	100	105	110
Ile Leu Met Gly Cys Ser Lys Ile Ala Lys Ser Phe Glu Ile Ile Ile	115	120	125
Ala Ser Arg Leu Leu Val Gly Ile Cys Ala Gly Ile Ser Ser Asn Val	130	135	140
Val Pro Met Tyr Leu Gly Glu Leu Ala Pro Lys Asn Leu Arg Gly Ala	145	150	155
Leu Gly Val Val Pro Gln Leu Phe Ile Thr Val Gly Ile Leu Val Ala	165	170	175
Gln Leu Phe Gly Leu Arg Ser Val Leu Ala Ser Glu Glu Gly Trp Pro	180	185	190
Ile Leu Leu Gly Leu Thr Gly Val Pro Ala Gly Leu Gln Leu Leu Leu	195	200	205
Leu Pro Phe Phe Pro Glu Ser Pro Arg Tyr Leu Leu Ile Gln Lys Lys	210	215	220
Asn Glu Ser Ala Ala Glu Lys Ala Leu Gln Thr Leu Arg Gly Trp Lys	225	230	235
Asp Val Asp Met Glu Met Glu Glu Ile Arg Lys Glu Asp Glu Ala Glu	245	250	255
Lys Ala Ala Gly Phe Ile Ser Val Trp Lys Leu Phe Arg Met Gln Ser	260	265	270
Leu Arg Trp Gln Leu Ile Ser Thr Ile Val Leu Met Ala Gly Gln Gln	275	280	285
Leu Ser Gly Val Asn Ala Ile Tyr Tyr Tyr Ala Asp Gln Ile Tyr Leu	290	295	300
Ser Ala Gly Val Lys Ser Asn Asp Val Gln Tyr Val Thr Ala Gly Thr			

305		310		315		320
Gly Ala Val Asn Val Phe Met Thr Met Val Thr Val Phe Val Val Glu						
		325		330		335
Leu Trp Gly Arg Arg Asn Leu Leu Leu Ile Gly Phe Ser Thr Cys Leu						
		340		345		350
Thr Ala Cys Ile Val Leu Thr Val Ala Leu Ala Leu Gln Asn Thr Ile						
		355		360		365
Ser Trp Met Pro Tyr Val Ser Ile Val Cys Val Ile Val Tyr Val Ile						
		370		375		380
Gly His Ala Val Gly Pro Ser Pro Ile Pro Ala Leu Phe Ile Thr Glu						
		385		390		395
Ile Phe Leu Gln Ser Ser Arg Pro Ser Ala Tyr Met Ile Gly Gly Ser						
		405		410		415
Val His Trp Leu Ser Asn Phe Ile Val Gly Leu Ile Phe Pro Phe Ile						
		420		425		430
Gln Val Gly Leu Gly Pro Tyr Ser Phe Ile Ile Phe Ala Ile Ile Cys						
		435		440		445
Leu Leu Thr Thr Ile Tyr Ile Phe Met Val Val Pro Glu Thr Lys Gly						
		450		455		460
Arg Thr Phe Val Glu Ile Asn Gln Ile Phe Ala Lys Lys Asn Lys Val						
		465		470		475
Ser Asp Val Tyr Pro Glu Lys Glu Glu Lys Glu Leu Asn Asp Leu Pro						
		485		490		495
Pro Ala Thr Arg Glu Gln						
		500				

<210> 66  
 <211> 502  
 <212> PRT  
 <213> Rattus norvegicus

<400> 66  
 Met Glu Lys Glu Asp Gln Glu Lys Thr Gly Lys Leu Thr Leu Val Leu  
 1 5 10 15  
 Ala Leu Ala Thr Phe Leu Ala Ala Phe Gly Ser Ser Phe Gln Tyr Gly  
 20 25 30  
 Tyr Asn Val Ala Ala Val Asn Ser Pro Ser Glu Phe Met Gln Gln Phe  
 35 40 45  
 Tyr Asn Asp Thr Tyr Tyr Asp Arg Asn Lys Glu Asn Ile Glu Ser Phe  
 50 55 60

Thr	Leu	Thr	Leu	Leu	Trp	Ser	Leu	Thr	Val	Ser	Met	Phe	Pro	Phe	Gly	65	70	75	80
Gly	Phe	Ile	Gly	Ser	Leu	Met	Val	Gly	Phe	Leu	Val	Asn	Asn	Leu	Gly	85	90	95	
Arg	Lys	Gly	Ala	Leu	Leu	Phe	Asn	Asn	Ile	Phe	Ser	Ile	Leu	Pro	Ala	100	105	110	
Ile	Leu	Met	Gly	Cys	Ser	Lys	Ile	Ala	Lys	Ser	Phe	Glu	Ile	Ile	Ile	115	120	125	
Ala	Ser	Arg	Leu	Leu	Val	Gly	Ile	Cys	Ala	Gly	Ile	Ser	Ser	Asn	Val	130	135	140	
Val	Pro	Met	Tyr	Leu	Gly	Glu	Leu	Ala	Pro	Lys	Asn	Leu	Arg	Gly	Ala	145	150	155	160
Leu	Gly	Val	Val	Pro	Gln	Leu	Phe	Ile	Thr	Val	Gly	Ile	Leu	Val	Ala	165	170	175	
Gln	Leu	Phe	Gly	Leu	Arg	Ser	Val	Leu	Ala	Ser	Glu	Glu	Gly	Trp	Pro	180	185	190	
Ile	Leu	Leu	Gly	Leu	Thr	Gly	Val	Pro	Ala	Gly	Leu	Gln	Leu	Leu	Leu	195	200	205	
Leu	Pro	Phe	Phe	Pro	Glu	Ser	Pro	Arg	Tyr	Leu	Leu	Ile	Gln	Lys	Lys	210	215	220	
Asn	Glu	Ser	Ala	Ala	Glu	Lys	Ala	Leu	Gln	Thr	Leu	Arg	Gly	Trp	Lys	225	230	235	240
Asp	Val	Asp	Met	Glu	Met	Glu	Glu	Ile	Arg	Lys	Glu	Asp	Glu	Ala	Glu	245	250	255	
Lys	Ala	Ala	Gly	Phe	Ile	Ser	Val	Trp	Lys	Leu	Phe	Arg	Met	Gln	Ser	260	265	270	
Leu	Arg	Trp	Gln	Leu	Ile	Ser	Thr	Ile	Val	Leu	Met	Thr	Gly	Gln	Gln	275	280	285	
Leu	Ser	Gly	Val	Asn	Ala	Ile	Tyr	Tyr	Tyr	Ala	Asp	Gln	Ile	Tyr	Leu	290	295	300	
Ser	Ala	Gly	Val	Lys	Ser	Asn	Asp	Val	Gln	Tyr	Val	Thr	Ala	Gly	Thr	305	310	315	320
Gly	Ala	Val	Asn	Val	Phe	Met	Thr	Met	Val	Thr	Val	Phe	Val	Val	Glu	325	330	335	
Leu	Trp	Gly	Arg	Arg	Asn	Leu	Leu	Leu	Ile	Gly	Phe	Ser	Thr	Cys	Leu	340	345	350	
Thr	Ala	Cys	Ile	Val	Leu	Thr	Val	Ala	Leu	Ala	Leu	Gln	Asn	Thr	Ile	355	360	365	



Ser Trp Met Pro Tyr Val Ser Ile Val Cys Val Ile Val Tyr Val Ile  
 370 375 380  
 Gly His Ala Val Gly Pro Ser Pro Ile Pro Ala Leu Phe Ile Thr Glu  
 385 390 395 400  
 Ile Phe Leu Gln Ser Ser Arg Pro Ser Ala Tyr Met Ile Gly Gly Ser  
 405 410 415  
 Val His Trp Leu Ser Asn Phe Ile Val Gly Leu Ile Phe Pro Phe Ile  
 420 425 430  
 Gln Val Gly Leu Gly Pro Tyr Ser Phe Ile Ile Phe Ala Ile Ile Cys  
 435 440 445  
 Leu Leu Thr Ser Ile Tyr Ile Phe Met Val Val Pro Glu Thr Lys Gly  
 450 455 460  
 Arg Thr Phe Val Glu Ile Asn Gln Ile Phe Ala Lys Lys Asn Lys Val  
 465 470 475 480  
 Ser Asp Val Tyr Pro Glu Lys Glu Glu Lys Glu Leu Asn Asp Leu Pro  
 485 490 495  
 Pro Ala Thr Arg Glu Gln  
 500

<210> 67  
 <211> 502  
 <212> PRT  
 <213> Rattus norvegicus

<400> 67  
 Met Glu Lys Glu Asp Gln Glu Lys Thr Gly Lys Leu Thr Leu Val Leu  
 1 5 10 15  
 Ala Leu Ala Thr Phe Leu Ala Ala Phe Gly Ser Ser Phe Gln Tyr Gly  
 20 25 30  
 Tyr Asn Val Ala Ala Val Asn Ser Pro Ser Glu Phe Met Gln Gln Phe  
 35 40 45  
 Tyr Asn Asp Thr Tyr Tyr Asp Arg Asn Lys Glu Asn Ile Glu Ser Phe  
 50 55 60  
 Thr Leu Thr Leu Leu Trp Ser Leu Thr Val Ser Met Phe Pro Phe Gly  
 65 70 75 80  
 Gly Phe Ile Gly Ser Leu Met Val Gly Phe Leu Val Asn Asn Leu Gly  
 85 90 95  
 Arg Lys Gly Ala Leu Leu Phe Asn Asn Ile Phe Ser Ile Leu Pro Ala  
 100 105 110  
 Ile Leu Met Gly Cys Ser Lys Ile Ala Lys Ser Phe Glu Ile Ile Ile  
 115 120 125

Ala	Ser	Arg	Leu	Leu	Val	Gly	Ile	Cys	Ala	Gly	Ile	Ser	Ser	Asn	Val	
130						135					140					
Val	Pro	Met	Tyr	Leu	Gly	Glu	Leu	Ala	Pro	Lys	Asn	Leu	Arg	Gly	Ala	
145					150					155					160	
Leu	Gly	Val	Ala	Pro	Gln	Leu	Phe	Ile	Thr	Val	Gly	Ile	Leu	Val	Ala	
				165					170					175		
Gln	Leu	Phe	Gly	Leu	Arg	Ser	Val	Leu	Ala	Ser	Glu	Glu	Gly	Trp	Pro	
			180					185					190			
Ile	Leu	Leu	Gly	Leu	Thr	Gly	Val	Pro	Ala	Gly	Leu	Gln	Leu	Leu	Leu	
	195						200					205				
Leu	Pro	Phe	Phe	Pro	Glu	Ser	Pro	Arg	Tyr	Leu	Leu	Ile	Gln	Lys	Lys	
	210					215					220					
Asn	Glu	Ser	Ala	Ala	Glu	Lys	Ala	Leu	Gln	Thr	Leu	Arg	Gly	Trp	Lys	
225					230					235					240	
Asp	Val	Asp	Met	Glu	Met	Glu	Glu	Ile	Arg	Lys	Glu	Asp	Glu	Ala	Glu	
			245						250					255		
Lys	Ala	Ala	Gly	Phe	Ile	Ser	Val	Trp	Lys	Leu	Phe	Arg	Met	Gln	Ser	
			260					265					270			
Leu	Arg	Trp	Gln	Leu	Ile	Ser	Thr	Ile	Val	Leu	Met	Ala	Gly	Gln	Gln	
	275						280					285				
Leu	Ser	Gly	Val	Asn	Ala	Ile	Tyr	Tyr	Tyr	Ala	Asp	Gln	Ile	Tyr	Leu	
	290					295					300					
Ser	Ala	Gly	Val	Lys	Ser	Asn	Asp	Val	Gln	Tyr	Val	Thr	Ala	Gly	Thr	
305					310					315					320	
Gly	Ala	Val	Asn	Val	Phe	Met	Thr	Met	Val	Thr	Val	Phe	Val	Val	Glu	
			325						330					335		
Leu	Trp	Gly	Arg	Arg	Asn	Leu	Leu	Leu	Ile	Gly	Phe	Ser	Thr	Cys	Leu	
			340					345					350			
Thr	Ala	Cys	Ile	Val	Leu	Thr	Val	Ala	Leu	Ala	Leu	Gln	Asn	Thr	Ile	
	355						360					365				
Ser	Trp	Met	Pro	Tyr	Val	Ser	Ile	Val	Cys	Val	Ile	Val	Tyr	Val	Ile	
	370					375					380					
Gly	His	Ala	Val	Gly	Pro	Ser	Pro	Ile	Pro	Ala	Leu	Phe	Ile	Thr	Glu	
385					390					395					400	
Ile	Phe	Leu	Gln	Ser	Ser	Arg	Pro	Ser	Ala	Tyr	Met	Ile	Gly	Gly	Ser	
				405					410					415		
Val	His	Trp	Leu	Ser	Asn	Phe	Ile	Val	Gly	Leu	Ile	Phe	Pro	Phe	Ile	
			420					425					430			

Gln Val Gly Leu Gly Pro Tyr Ser Phe Ile Ile Phe Ala Ile Ile Cys  
           435                          440                          445  
 Leu Leu Thr Thr Ile Tyr Ile Phe Met Val Val Pro Glu Thr Lys Gly  
           450                          455                          460  
 Arg Thr Phe Val Glu Ile Asn Gln Ile Phe Ala Lys Lys Asn Asn Val  
 465                          470                          475                          480  
 Ser Asp Val Tyr Pro Glu Lys Glu Glu Lys Glu Leu Asn Asp Leu Pro  
                           485                          490                          495  
 Pro Ala Thr Arg Glu Gln  
                           500

<210> 68  
 <211> 501  
 <212> PRT  
 <213> Mus musculus

<400> 68  
 Met Glu Glu Lys His Gln Glu Glu Thr Gly Glu Leu Thr Leu Val Leu  
   1                          5                          10                          15  
 Ala Leu Ala Thr Leu Ile Ala Ala Phe Gly Ser Ser Phe Gln Tyr Gly  
                           20                          25                          30  
 Tyr Asn Val Ala Ala Val Asn Ser Pro Ser Glu Phe Met Gln Gln Phe  
                           35                          40                          45  
 Tyr Asn Asp Thr Tyr Tyr Asp Arg Asn Glu Glu Asn Ile Glu Ser Phe  
           50                          55                          60  
 Thr Leu Thr Leu Leu Trp Ser Leu Thr Val Ser Met Phe Pro Phe Gly  
   65                          70                          75                          80  
 Gly Phe Ile Ser Ser Leu Val Val Gly Asn Leu Val Asn Lys Leu Gly  
                           85                          90                          95  
 Lys Lys Arg Ala Leu Leu Phe Asn Asn Ile Phe Ser Ile Leu Pro Ala  
                           100                          105                          110  
 Ile Phe Met Gly Cys Ser Gln Ile Ala Gln Ser Phe Glu Leu Ile Ile  
           115                          120                          125  
 Ile Ser Arg Leu Leu Val Gly Ile Cys Ala Gly Ile Ser Ser Asn Val  
           130                          135                          140  
 Val Pro Met Tyr Leu Gly Glu Leu Ala Pro Lys Asn Leu Arg Gly Ala  
 145                          150                          155                          160  
 Leu Gly Val Val Pro Gln Leu Phe Ile Thr Val Gly Ile Leu Val Ala  
                           165                          170                          175  
 Gln Leu Phe Gly Leu Arg Ser Leu Leu Ala Asn Glu Asp Gly Trp Pro

180						185					190				
Val	Leu	Leu	Gly	Leu	Thr	Gly	Val	Pro	Ala	Gly	Leu	Gln	Leu	Leu	Leu
		195					200					205			
Leu	Pro	Phe	Phe	Pro	Glu	Ser	Pro	Arg	Tyr	Leu	Leu	Ile	Gln	Lys	Lys
	210					215					220				
Asp	Glu	Ala	Ala	Ala	Glu	Arg	Ala	Leu	Gln	Thr	Ile	Arg	Gly	Trp	Lys
225					230					235					240
Asp	Val	His	Leu	Glu	Met	Glu	Glu	Ile	Arg	Lys	Glu	Asp	Glu	Ala	Glu
			245						250					255	
Lys	Ala	Ala	Gly	Phe	Ile	Ser	Val	Trp	Lys	Leu	Phe	Thr	Met	Gln	Ser
			260					265					270		
Leu	Arg	Trp	Gln	Leu	Ile	Ser	Met	Ile	Val	Leu	Met	Ala	Gly	Gln	Gln
	275						280					285			
Leu	Ser	Gly	Val	Asn	Ala	Ile	Tyr	Tyr	Tyr	Ala	Asp	Gln	Ile	Tyr	Leu
	290					295					300				
Ser	Ala	Gly	Val	Lys	Ser	Asp	Asp	Val	Gln	Tyr	Val	Thr	Ala	Gly	Thr
305					310					315					320
Gly	Ala	Val	Asn	Val	Phe	Met	Thr	Ile	Leu	Thr	Ile	Phe	Val	Val	Glu
			325						330					335	
Leu	Trp	Gly	Arg	Arg	Phe	Leu	Leu	Leu	Val	Gly	Phe	Ser	Thr	Cys	Leu
			340					345					350		
Ile	Ala	Cys	Leu	Val	Leu	Thr	Ala	Ala	Leu	Ala	Leu	Gln	Asn	Thr	Ile
		355					360					365			
Ser	Trp	Met	Pro	Tyr	Ile	Ser	Ile	Val	Cys	Val	Ile	Val	Tyr	Val	Ile
	370					375					380				
Gly	His	Ala	Leu	Gly	Pro	Ser	Pro	Ile	Pro	Ala	Leu	Leu	Ile	Thr	Glu
385					390					395					400
Ile	Phe	Leu	Gln	Ser	Ser	Arg	Pro	Ala	Ala	Tyr	Met	Ile	Gly	Gly	Ser
			405					410					415		
Val	His	Trp	Leu	Ser	Asn	Phe	Thr	Val	Gly	Leu	Ile	Phe	Pro	Phe	Ile
			420					425					430		
Gln	Met	Gly	Leu	Gly	Pro	Tyr	Ser	Phe	Ile	Ile	Phe	Ala	Thr	Ile	Cys
		435					440					445			
Phe	Leu	Thr	Thr	Ile	Tyr	Ile	Phe	Met	Val	Val	Pro	Glu	Thr	Lys	Gly
	450					455					460				
Arg	Thr	Phe	Ile	Glu	Ile	Ile	Gln	Ile	Phe	Thr	Met	Lys	Asn	Lys	Val
465					470					475					480
Ser	Asp	Val	Tyr	Pro	Lys	Lys	Glu	Glu	Glu	Leu	Gly	Ala	Leu	Pro	His

485	490	495
Ala Ile Leu Glu Gln		
500		
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<211> 570		
<212> PRT		
<213> Homo sapiens		
<400> 69		
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Tyr Thr Ser Ser Leu Gly Ser Gln Val Arg Tyr Ala Cys Arg Glu Gly		
20 25 30		
Phe Phe Ser Val Pro Glu Asp Thr Val Ser Ser Cys Thr Gly Leu Gly		
35 40 45		
Thr Trp Glu Ser Pro Lys Leu His Cys Gln Glu Ile Asn Cys Gly Asn		
50 55 60		
Pro Pro Glu Met Arg His Ala Ile Leu Val Gly Asn His Ser Ser Arg		
65 70 75 80		
Leu Gly Gly Val Ala Arg Tyr Val Cys Gln Glu Gly Phe Glu Ser Pro		
85 90 95		
Gly Gly Lys Ile Thr Ser Val Cys Thr Glu Lys Gly Thr Trp Arg Glu		
100 105 110		
Ser Thr Leu Thr Cys Thr Glu Ile Leu Thr Lys Ile Asn Asp Val Ser		
115 120 125		
Leu Phe Asn Asp Thr Cys Val Arg Trp Gln Ile Asn Ser Arg Arg Ile		
130 135 140		
Asn Pro Lys Ile Ser Tyr Val Ile Ser Ile Lys Gly Gln Arg Leu Asp		
145 150 155 160		
Pro Met Glu Ser Val Arg Glu Glu Thr Val Asn Leu Thr Thr Asp Ser		
165 170 175		
Arg Thr Pro Glu Val Cys Leu Ala Leu Tyr Pro Gly Thr Asn Tyr Thr		
180 185 190		
Val Asn Ile Ser Thr Ala Pro Pro Arg Arg Ser Met Pro Ala Val Ile		
195 200 205		
Gly Phe Gln Thr Ala Glu Val Asp Leu Leu Glu Asp Asp Gly Ser Phe		
210 215 220		
Asn Ile Ser Ile Phe Asn Glu Thr Cys Leu Lys Leu Asn Arg Arg Ser		
225 230 235 240		

Arg	Lys	Val	Gly	Ser	Glu	His	Met	Tyr	Gln	Phe	Thr	Val	Leu	Gly	Gln		
				245					250					255			
Arg	Trp	Tyr	Leu	Ala	Asn	Phe	Ser	His	Ala	Thr	Ser	Phe	Asn	Phe	Thr		
			260					265					270				
Thr	Arg	Glu	Gln	Val	Pro	Val	Val	Cys	Leu	Asp	Leu	Tyr	Pro	Thr	Thr		
		275					280					285					
Asp	Tyr	Thr	Val	Asn	Val	Thr	Leu	Leu	Arg	Ser	Pro	Lys	Arg	His	Ser		
	290					295					300						
Val	Gln	Ile	Thr	Ile	Ala	Thr	Pro	Pro	Ala	Val	Lys	Gln	Thr	Ile	Ser		
305					310					315					320		
Asn	Ile	Ser	Gly	Phe	Asn	Glu	Thr	Cys	Leu	Arg	Trp	Arg	Ser	Ile	Lys		
				325					330					335			
Thr	Ala	Asp	Met	Glu	Glu	Met	Tyr	Leu	Phe	His	Ile	Trp	Gly	Gln	Arg		
			340					345					350				
Trp	Tyr	Gln	Lys	Glu	Phe	Ala	Gln	Glu	Met	Thr	Phe	Asn	Ile	Ser	Ser		
		355					360					365					
Ser	Ser	Arg	Asp	Pro	Glu	Val	Cys	Leu	Asp	Leu	Arg	Pro	Gly	Thr	Asn		
	370					375					380						
Tyr	Asn	Val	Ser	Leu	Arg	Ala	Leu	Ser	Ser	Glu	Leu	Pro	Val	Val	Ile		
385					390					395					400		
Ser	Leu	Thr	Thr	Gln	Ile	Thr	Glu	Pro	Pro	Leu	Pro	Glu	Val	Glu	Phe		
				405					410					415			
Phe	Thr	Val	His	Arg	Gly	Pro	Leu	Pro	Arg	Leu	Arg	Leu	Arg	Lys	Ala		
			420					425					430				
Lys	Glu	Lys	Asn	Gly	Pro	Ile	Ser	Ser	Tyr	Gln	Val	Leu	Val	Leu	Pro		
		435					440					445					
Leu	Ala	Leu	Gln	Ser	Thr	Phe	Ser	Cys	Asp	Ser	Glu	Gly	Ala	Ser	Ser		
	450					455					460						
Phe	Phe	Ser	Asn	Ala	Ser	Asp	Ala	Asp	Gly	Tyr	Val	Ala	Ala	Glu	Leu		
465				470					475						480		
Leu	Ala	Lys	Asp	Val	Pro	Asp	Asp	Ala	Met	Glu	Ile	Pro	Ile	Gly	Asp		
				485					490					495			
Arg	Leu	Tyr	Tyr	Gly	Glu	Tyr	Tyr	Asn	Ala	Pro	Leu	Lys	Arg	Gly	Ser		
			500					505					510				
Asp	Tyr	Cys	Ile	Ile	Leu	Arg	Ile	Thr	Ser	Glu	Trp	Asn	Lys	Val	Arg		
		515					520					525					
Arg	His	Ser	Cys	Ala	Val	Trp	Ala	Gln	Val	Lys	Asp	Ser	Ser	Leu	Met		
	530					535					540						

Leu Leu Gln Met Ala Gly Val Gly Leu Gly Ser Leu Ala Val Val Ile  
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Ile Leu Thr Phe Leu Ser Phe Ser Ala Val  
 565 570

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 <211> 620  
 <212> PRT  
 <213> Homo sapiens

<400> 70  
 Glu Cys Glu Val Ser Gly Leu Cys Arg His Gly Gly Arg Cys Val Asn  
 1 5 10 15

Thr His Gly Ser Phe Glu Cys Tyr Cys Met Asp Gly Tyr Leu Pro Arg  
 20 25 30

Asn Gly Pro Glu Pro Phe His Pro Thr Thr Asp Ala Thr Ser Cys Thr  
 35 40 45

Glu Ile Asp Cys Gly Thr Pro Pro Glu Val Pro Asp Gly Tyr Ile Ile  
 50 55 60

Gly Asn Tyr Thr Ser Ser Leu Gly Ser Gln Val Arg Tyr Ala Cys Arg  
 65 70 75 80

Glu Gly Phe Phe Ser Val Pro Glu Asp Thr Val Ser Ser Cys Thr Gly  
 85 90 95

Leu Gly Thr Trp Glu Ser Pro Lys Leu His Cys Gln Glu Ile Asn Cys  
 100 105 110

Gly Asn Pro Pro Glu Met Arg His Ala Ile Leu Val Gly Asn His Ser  
 115 120 125

Ser Arg Leu Gly Gly Val Ala Arg Tyr Val Cys Gln Glu Gly Phe Glu  
 130 135 140

Ser Pro Gly Gly Lys Ile Thr Ser Val Cys Thr Glu Lys Gly Thr Trp  
 145 150 155 160

Arg Glu Ser Thr Leu Thr Cys Thr Glu Ile Leu Thr Lys Ile Asn Asp  
 165 170 175

Val Ser Leu Phe Asn Asp Thr Cys Val Arg Trp Gln Ile Asn Ser Arg  
 180 185 190

Arg Ile Asn Pro Lys Ile Ser Tyr Val Ile Ser Ile Lys Gly Gln Arg  
 195 200 205

Leu Asp Pro Met Glu Ser Val Arg Glu Glu Thr Val Asn Leu Thr Thr  
 210 215 220

Asp Ser Arg Thr Pro Glu Val Cys Leu Ala Leu Tyr Pro Gly Thr Asn  
 225 230 235 240

Tyr	Thr	Val	Asn	Ile	Ser	Thr	Ala	Pro	Pro	Arg	Arg	Ser	Met	Pro	Ala	245	250	255
Val	Ile	Gly	Phe	Gln	Thr	Ala	Glu	Val	Asp	Leu	Leu	Glu	Asp	Asp	Gly	260	265	270
Ser	Phe	Asn	Ile	Ser	Ile	Phe	Asn	Glu	Thr	Cys	Leu	Lys	Leu	Asn	Arg	275	280	285
Arg	Ser	Arg	Lys	Val	Gly	Ser	Glu	His	Met	Tyr	Gln	Phe	Thr	Val	Leu	290	295	300
Gly	Gln	Arg	Trp	Tyr	Leu	Ala	Asn	Phe	Ser	His	Ala	Thr	Ser	Phe	Asn	305	310	315
Phe	Thr	Thr	Arg	Glu	Gln	Val	Pro	Val	Val	Cys	Leu	Asp	Leu	Tyr	Pro	325	330	335
Thr	Thr	Asp	Tyr	Thr	Val	Asn	Val	Thr	Leu	Leu	Arg	Ser	Pro	Lys	Arg	340	345	350
His	Ser	Val	Gln	Ile	Thr	Ile	Ala	Thr	Pro	Pro	Ala	Val	Lys	Gln	Thr	355	360	365
Ile	Ser	Asn	Ile	Ser	Gly	Phe	Asn	Glu	Thr	Cys	Leu	Arg	Trp	Arg	Ser	370	375	380
Ile	Lys	Thr	Ala	Asp	Met	Glu	Glu	Met	Tyr	Leu	Phe	His	Ile	Trp	Gly	385	390	395
Gln	Arg	Trp	Tyr	Gln	Lys	Glu	Phe	Ala	Gln	Glu	Met	Thr	Phe	Asn	Ile	405	410	415
Ser	Ser	Ser	Ser	Arg	Asp	Pro	Glu	Val	Cys	Leu	Asp	Leu	Arg	Pro	Gly	420	425	430
Thr	Asn	Tyr	Asn	Val	Ser	Leu	Arg	Ala	Leu	Ser	Ser	Glu	Leu	Pro	Val	435	440	445
Val	Ile	Ser	Leu	Thr	Thr	Gln	Ile	Thr	Glu	Pro	Pro	Leu	Pro	Glu	Val	450	455	460
Glu	Phe	Phe	Thr	Val	His	Arg	Gly	Pro	Leu	Pro	Arg	Leu	Arg	Leu	Arg	465	470	475
Lys	Ala	Lys	Glu	Lys	Asn	Gly	Pro	Ile	Ser	Ser	Tyr	Gln	Val	Leu	Val	485	490	495
Leu	Pro	Leu	Ala	Leu	Gln	Ser	Thr	Phe	Ser	Cys	Asp	Ser	Glu	Gly	Ala	500	505	510
Ser	Ser	Phe	Phe	Ser	Asn	Ala	Ser	Asp	Ala	Asp	Gly	Tyr	Val	Ala	Ala	515	520	525
Glu	Leu	Leu	Ala	Lys	Asp	Val	Pro	Asp	Asp	Ala	Met	Glu	Ile	Pro	Ile	530	535	540



Gly Asp Arg Leu Tyr Tyr Gly Glu Tyr Tyr Asn Ala Pro Leu Lys Arg  
 545 550 555 560

Gly Ser Asp Tyr Cys Ile Ile Leu Arg Ile Thr Ser Glu Trp Asn Lys  
 565 570 575

Val Arg Arg His Ser Cys Ala Val Trp Ala Gln Val Lys Asp Ser Ser  
 580 585 590

Leu Met Leu Leu Gln Met Ala Gly Val Gly Leu Gly Ser Leu Ala Val  
 595 600 605

Val Ile Ile Leu Thr Phe Leu Ser Phe Ser Ala Val  
 610 615 620

<210> 71  
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 <213> Homo sapiens

<400> 71  
 Met Asp Gly Tyr Leu Pro Arg Asn Gly Pro Glu Pro Phe His Pro Thr  
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Thr Asp Ala Thr Ser Cys Thr Glu Ile Asp Cys Gly Thr Pro Pro Glu  
 20 25 30

Val Pro Asp Gly Tyr Ile Ile Gly Asn Tyr Thr Ser Ser Leu Gly Ser  
 35 40 45

Gln Val Arg Tyr Ala Cys Arg Glu Gly Phe Phe Ser Val Pro Glu Asp  
 50 55 60

Thr Val Ser Ser Cys Thr Gly Leu Gly Thr Trp Glu Ser Pro Lys Leu  
 65 70 75 80

His Cys Gln Glu Ile Asn Cys Gly Asn Pro Pro Glu Met Arg His Ala  
 85 90 95

Ile Leu Val Gly Asn His Ser Ser Arg Leu Gly Gly Val Ala Arg Tyr  
 100 105 110

Val Cys Gln Glu Gly Phe Glu Ser Pro Gly Gly Lys Ile Thr Ser Val  
 115 120 125

Cys Thr Glu Lys Gly Thr Trp Arg Glu Ser Thr Leu Thr Cys Thr Glu  
 130 135 140

Ile Leu Thr Lys Ile Asn Asp Val Ser Leu Phe Asn Asp Thr Cys Val  
 145 150 155 160

Arg Trp Gln Ile Asn Ser Arg Arg Ile Asn Pro Lys Ile Ser Tyr Val  
 165 170 175

Ile Ser Ile Lys Gly Gln Arg Leu Asp Pro Met Glu Ser Val Arg Glu

180						185						190					
Glu	Thr	Val	Asn	Leu	Thr	Thr	Asp	Ser	Arg	Thr	Pro	Glu	Val	Cys	Leu		
		195					200						205				
Ala	Leu	Tyr	Pro	Gly	Thr	Asn	Tyr	Thr	Val	Asn	Ile	Ser	Thr	Ala	Pro		
	210						215				220						
Pro	Arg	Arg	Ser	Met	Pro	Ala	Val	Ile	Gly	Phe	Gln	Thr	Ala	Glu	Val		
225					230					235					240		
Asp	Leu	Leu	Glu	Asp	Asp	Gly	Ser	Phe	Asn	Ile	Ser	Ile	Phe	Asn	Glu		
				245					250					255			
Thr	Cys	Leu	Lys	Leu	Asn	Arg	Arg	Ser	Arg	Lys	Val	Gly	Ser	Glu	His		
			260					265					270				
Met	Tyr	Gln	Phe	Thr	Val	Leu	Gly	Gln	Arg	Trp	Tyr	Leu	Ala	Asn	Phe		
		275					280						285				
Ser	His	Ala	Thr	Ser	Phe	Asn	Phe	Thr	Thr	Arg	Glu	Gln	Val	Pro	Val		
	290						295				300						
Val	Cys	Leu	Asp	Leu	Tyr	Pro	Thr	Thr	Asp	Tyr	Thr	Val	Asn	Val	Thr		
305					310					315					320		
Leu	Leu	Arg	Ser	Pro	Lys	Arg	His	Ser	Val	Gln	Ile	Thr	Ile	Ala	Thr		
				325					330					335			
Pro	Pro	Ala	Val	Lys	Gln	Thr	Ile	Ser	Asn	Ile	Ser	Gly	Phe	Asn	Glu		
			340					345					350				
Thr	Cys	Leu	Arg	Trp	Arg	Ser	Ile	Lys	Thr	Ala	Asp	Met	Glu	Glu	Met		
		355					360					365					
Tyr	Leu	Phe	His	Ile	Trp	Gly	Gln	Arg	Trp	Tyr	Gln	Lys	Glu	Phe	Ala		
	370						375				380						
Gln	Glu	Met	Thr	Phe	Asn	Ile	Ser	Ser	Ser	Ser	Arg	Asp	Pro	Glu	Val		
385					390						395				400		
Cys	Leu	Asp	Leu	Arg	Pro	Gly	Thr	Asn	Tyr	Asn	Val	Ser	Leu	Arg	Ala		
				405					410					415			
Leu	Ser	Ser	Glu	Leu	Pro	Val	Val	Ile	Ser	Leu	Thr	Thr	Gln	Ile	Thr		
			420					425					430				
Glu	Pro	Pro	Leu	Pro	Glu	Val	Glu	Phe	Phe	Thr	Val	His	Arg	Gly	Pro		
		435					440						445				
Leu	Pro	Arg	Leu	Arg	Leu	Arg	Lys	Ala	Lys	Glu	Lys	Asn	Gly	Pro	Ile		
	450						455				460						
Ser	Ser	Tyr	Gln	Val	Leu	Val	Leu	Pro	Leu	Ala	Leu	Gln	Ser	Thr	Phe		
465					470					475					480		
Ser	Cys	Asp	Ser	Glu	Gly	Ala	Ser	Ser	Phe	Phe	Ser	Asn	Ala	Ser	Asp		

485										490					495															
Ala	Asp	Gly	Tyr	Val	Ala	Ala	Glu	Leu	Leu	Ala	Lys	Asp	Val	Pro	Asp															
			500						505					510																
Asp	Ala	Met	Glu	Ile	Pro	Ile	Gly	Asp	Arg	Leu	Tyr	Tyr	Gly	Glu	Tyr															
		515					520					525																		
Tyr	Asn	Ala	Pro	Leu	Lys	Arg	Gly	Ser	Asp	Tyr	Cys	Ile	Ile	Leu	Arg															
	530					535					540																			
Ile	Thr	Ser	Glu	Trp	Asn	Lys	Ile	Arg	His	Ser	Cys	Cys	Cys	Arg	Trp															
545					550					555					560															
Arg	Val	Leu	Asp	Trp	Val	Pro	Trp	Leu	Leu																					
				565					570																					

<210> 72  
 <211> 503  
 <212> PRT  
 <213> Homo sapiens

<400> 72

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Val	Ala	Arg	Tyr	Val	Cys	Gln	Glu	Gly	Phe	Glu	Ser	Pro	Gly	Gly	Lys															
			20					25					30																	
Ile	Thr	Ser	Val	Cys	Thr	Glu	Lys	Gly	Thr	Trp	Arg	Glu	Ser	Thr	Leu															
		35					40					45																		
Thr	Cys	Thr	Glu	Ile	Leu	Thr	Lys	Ile	Asn	Asp	Val	Ser	Leu	Phe	Asn															
	50					55					60																			
Asp	Thr	Cys	Val	Arg	Trp	Gln	Ile	Asn	Ser	Arg	Arg	Ile	Asn	Pro	Lys															
65					70					75				80																
Ile	Ser	Tyr	Val	Ile	Ser	Ile	Lys	Gly	Gln	Arg	Leu	Asp	Pro	Met	Glu															
				85					90					95																
Ser	Val	Arg	Glu	Glu	Thr	Val	Asn	Leu	Thr	Thr	Asp	Ser	Arg	Thr	Pro															
			100					105					110																	
Glu	Val	Cys	Leu	Ala	Leu	Tyr	Pro	Gly	Thr	Asn	Tyr	Thr	Val	Asn	Ile															
		115					120					125																		
Ser	Thr	Ala	Pro	Pro	Arg	Arg	Ser	Met	Pro	Ala	Val	Ile	Gly	Phe	Gln															
		130				135					140																			
Thr	Ala	Glu	Val	Asp	Leu	Leu	Glu	Asp	Asp	Gly	Ser	Phe	Asn	Ile	Ser															
145					150					155				160																
Ile	Phe	Asn	Glu	Thr	Cys	Leu	Lys	Leu	Asn	Arg	Arg	Ser	Arg	Lys	Val															
				165					170					175																

Gly	Ser	Glu	His	Met	Tyr	Gln	Phe	Thr	Val	Leu	Gly	Gln	Arg	Trp	Tyr		
			180					185					190				
Leu	Ala	Asn	Phe	Ser	His	Ala	Thr	Ser	Phe	Asn	Phe	Thr	Thr	Arg	Glu		
		195					200					205					
Gln	Val	Pro	Val	Val	Cys	Leu	Asp	Leu	Tyr	Pro	Thr	Thr	Asp	Tyr	Thr		
	210					215					220						
Val	Asn	Val	Thr	Leu	Leu	Arg	Ser	Pro	Lys	Arg	His	Ser	Val	Gln	Ile		
225					230					235					240		
Thr	Ile	Ala	Thr	Pro	Pro	Ala	Val	Lys	Gln	Thr	Ile	Ser	Asn	Ile	Ser		
				245					250					255			
Gly	Phe	Asn	Glu	Thr	Cys	Leu	Arg	Trp	Arg	Ser	Ile	Lys	Thr	Ala	Asp		
			260					265					270				
Met	Glu	Glu	Met	Tyr	Leu	Phe	His	Ile	Trp	Gly	Gln	Arg	Trp	Tyr	Gln		
	275						280					285					
Lys	Glu	Phe	Ala	Gln	Glu	Met	Thr	Phe	Asn	Ile	Ser	Ser	Ser	Ser	Arg		
	290					295					300						
Asp	Pro	Glu	Val	Cys	Leu	Asp	Leu	Arg	Pro	Gly	Thr	Asn	Tyr	Asn	Val		
305					310					315					320		
Ser	Leu	Arg	Ala	Leu	Ser	Ser	Glu	Leu	Pro	Val	Val	Ile	Ser	Leu	Thr		
				325					330					335			
Thr	Gln	Ile	Thr	Glu	Pro	Pro	Leu	Pro	Glu	Val	Glu	Phe	Phe	Thr	Val		
			340					345					350				
His	Arg	Gly	Pro	Leu	Pro	Arg	Leu	Arg	Leu	Arg	Lys	Ala	Lys	Glu	Lys		
		355					360					365					
Asn	Gly	Pro	Ile	Ser	Ser	Tyr	Gln	Val	Leu	Val	Leu	Pro	Leu	Ala	Leu		
	370					375					380						
Gln	Ser	Thr	Phe	Ser	Cys	Asp	Ser	Glu	Gly	Ala	Ser	Ser	Phe	Phe	Ser		
385					390					395					400		
Asn	Ala	Ser	Asp	Ala	Asp	Gly	Tyr	Val	Ala	Ala	Glu	Leu	Leu	Ala	Lys		
				405					410					415			
Asp	Val	Pro	Asp	Asp	Ala	Met	Glu	Ile	Pro	Ile	Gly	Asp	Arg	Leu	Tyr		
			420					425					430				
Tyr	Gly	Glu	Tyr	Tyr	Asn	Ala	Pro	Leu	Lys	Arg	Gly	Ser	Asp	Tyr	Cys		
		435					440					445					
Ile	Ile	Leu	Arg	Ile	Thr	Ser	Glu	Trp	Asn	Lys	Val	Arg	Arg	His	Ser		
	450					455					460						
Cys	Ala	Val	Trp	Ala	Gln	Val	Lys	Asp	Ser	Ser	Leu	Met	Leu	Leu	Gln		
465					470					475					480		

Met Ala Gly Val Gly Leu Gly Ser Leu Ala Val Val Ile Ile Leu Thr  
485 490 495

Phe Leu Ser Phe Ser Ala Val  
500

<210> 73  
<211> 409  
<212> PRT  
<213> Homo sapiens

<400> 73  
Met Glu Ser Val Arg Glu Glu Thr Val Asn Leu Thr Thr Asp Ser Arg  
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Thr Pro Glu Val Cys Leu Ala Leu Tyr Pro Gly Thr Asn Tyr Thr Val  
20 25 30

Asn Ile Ser Thr Ala Pro Pro Arg Arg Ser Met Pro Ala Val Ile Gly  
35 40 45

Phe Gln Thr Ala Glu Val Asp Leu Leu Glu Asp Asp Gly Ser Phe Asn  
50 55 60

Ile Ser Ile Phe Asn Glu Thr Cys Leu Lys Leu Asn Arg Arg Ser Arg  
65 70 75 80

Lys Val Gly Ser Glu His Met Tyr Gln Phe Thr Val Leu Gly Gln Arg  
85 90 95

Trp Tyr Leu Ala Asn Phe Ser His Ala Thr Ser Phe Asn Phe Thr Thr  
100 105 110

Arg Glu Gln Val Pro Val Val Cys Leu Asp Leu Tyr Pro Thr Thr Asp  
115 120 125

Tyr Thr Val Asn Val Thr Leu Leu Arg Ser Pro Lys Arg His Ser Val  
130 135 140

Gln Ile Thr Ile Ala Thr Pro Pro Ala Val Lys Gln Thr Ile Ser Asn  
145 150 155 160

Ile Ser Gly Phe Asn Glu Thr Cys Leu Arg Trp Arg Ser Ile Lys Thr  
165 170 175

Ala Asp Met Glu Glu Met Tyr Leu Phe His Ile Trp Gly Gln Arg Trp  
180 185 190

Tyr Gln Lys Glu Phe Ala Gln Glu Met Thr Phe Asn Ile Ser Ser Ser  
195 200 205

Ser Arg Asp Pro Glu Val Cys Leu Asp Leu Arg Pro Gly Thr Asn Tyr  
210 215 220

Asn Val Ser Leu Arg Ala Leu Ser Ser Glu Leu Pro Val Val Ile Ser  
225 230 235 240

Leu Thr Thr Gln Ile Thr Glu Pro Pro Leu Pro Glu Val Glu Phe Phe  
 245 250 255  
 Thr Val His Arg Gly Pro Leu Pro Arg Leu Arg Leu Arg Lys Ala Lys  
 260 265 270  
 Glu Lys Asn Gly Pro Ile Ser Ser Tyr Gln Val Leu Val Leu Pro Leu  
 275 280 285  
 Ala Leu Gln Ser Thr Phe Ser Cys Asp Ser Glu Gly Ala Ser Ser Phe  
 290 295 300  
 Phe Ser Asn Ala Ser Asp Ala Asp Gly Tyr Val Ala Ala Glu Leu Leu  
 305 310 315 320  
 Ala Lys Asp Val Pro Asp Asp Ala Met Glu Ile Pro Ile Gly Asp Arg  
 325 330 335  
 Leu Tyr Tyr Gly Glu Tyr Tyr Asn Ala Pro Leu Lys Arg Gly Ser Asp  
 340 345 350  
 Tyr Cys Ile Ile Leu Arg Ile Thr Ser Glu Trp Asn Lys Val Arg Arg  
 355 360 365  
 His Ser Cys Ala Val Trp Ala Gln Val Lys Asp Ser Ser Leu Met Leu  
 370 375 380  
 Leu Gln Met Ala Gly Val Gly Leu Gly Ser Leu Ala Val Val Ile Ile  
 385 390 395 400  
 Leu Thr Phe Leu Ser Phe Ser Ala Val  
 405

<210> 74  
 <211> 273  
 <212> PRT  
 <213> Homo sapiens

<400> 74  
 Met Ile Phe Leu Leu Leu Met Leu Ser Leu Glu Leu Gln Leu His Gln  
 1 5 10 15  
 Ile Ala Ala Leu Phe Thr Val Thr Val Pro Lys Glu Leu Tyr Ile Ile  
 20 25 30  
 Glu His Gly Ser Asn Val Thr Leu Glu Cys Asn Phe Asp Thr Gly Ser  
 35 40 45  
 His Val Asn Leu Gly Ala Ile Thr Ala Ser Leu Gln Lys Val Glu Asn  
 50 55 60  
 Asp Thr Ser Pro His Arg Glu Arg Ala Thr Leu Leu Glu Glu Gln Leu  
 65 70 75 80  
 Pro Leu Gly Lys Ala Ser Phe His Ile Pro Gln Val Gln Val Arg Asp

85								90				95						
Glu	Gly	Gln	Tyr	Gln	Cys	Ile	Ile	Ile	Tyr	Gly	Val	Ala	Trp	Asp	Tyr			
			100					105					110					
Lys	Tyr	Leu	Thr	Leu	Lys	Val	Lys	Ala	Ser	Tyr	Arg	Lys	Ile	Asn	Thr			
		115					120					125						
His	Ile	Leu	Lys	Val	Pro	Glu	Thr	Asp	Glu	Val	Glu	Leu	Thr	Cys	Gln			
	130					135					140							
Ala	Thr	Gly	Tyr	Pro	Leu	Ala	Glu	Val	Ser	Trp	Pro	Asn	Val	Ser	Val			
145					150					155					160			
Pro	Ala	Asn	Thr	Ser	His	Ser	Arg	Thr	Pro	Glu	Gly	Leu	Tyr	Gln	Val			
				165					170					175				
Thr	Ser	Val	Leu	Arg	Leu	Lys	Pro	Pro	Pro	Gly	Arg	Asn	Phe	Ser	Cys			
		180						185					190					
Val	Phe	Trp	Asn	Thr	His	Val	Arg	Glu	Leu	Thr	Leu	Ala	Ser	Ile	Asp			
	195						200					205						
Leu	Gln	Ser	Gln	Met	Glu	Pro	Arg	Thr	His	Pro	Thr	Trp	Leu	Leu	His			
	210					215					220							
Ile	Phe	Ile	Pro	Phe	Cys	Ile	Ile	Ala	Phe	Ile	Phe	Ile	Ala	Thr	Val			
225					230					235					240			
Ile	Ala	Leu	Arg	Lys	Gln	Leu	Cys	Gln	Lys	Leu	Tyr	Ser	Ser	Lys	Asp			
			245						250					255				
Thr	Thr	Lys	Arg	Pro	Val	Thr	Thr	Thr	Lys	Arg	Glu	Val	Asn	Ser	Ala			
		260						265					270					

Ile

<210> 75  
 <211> 273  
 <212> PRT  
 <213> Homo sapiens

<400> 75  
 Met Ile Phe Leu Leu Leu Met Leu Ser Leu Glu Leu Gln Leu His Gln  
 1 5 10 15  
 Ile Ala Ala Leu Phe Thr Val Thr Val Pro Lys Glu Leu Tyr Ile Ile  
 20 25 30  
 Glu His Gly Ser Asn Val Thr Leu Glu Cys Asn Phe Asp Thr Gly Ser  
 35 40 45  
 His Val Asn Leu Gly Ala Ile Thr Ala Ser Leu Gln Lys Val Glu Asn  
 50 55 60

Asp Thr Ser Pro His Arg Glu Arg Ala Thr Leu Leu Glu Glu Gln Leu  
 65 70 75 80  
 Pro Leu Gly Lys Ala Ser Phe His Ile Pro Gln Val Gln Val Arg Asp  
 85 90 95  
 Glu Gly Gln Tyr Gln Cys Ile Ile Ile Tyr Gly Val Ala Trp Asp Tyr  
 100 105 110  
 Lys Tyr Leu Thr Leu Lys Val Lys Ala Ser Tyr Arg Lys Ile Asn Thr  
 115 120 125  
 His Ile Leu Lys Val Pro Glu Thr Asp Glu Val Glu Leu Thr Cys Gln  
 130 135 140  
 Ala Thr Gly Tyr Pro Leu Ala Glu Val Ser Trp Pro Asn Val Ser Val  
 145 150 155 160  
 Pro Ala Asn Thr Ser His Ser Arg Thr Pro Glu Gly Leu Tyr Gln Val  
 165 170 175  
 Thr Ser Val Leu Arg Leu Lys Pro Pro Pro Gly Arg Asn Phe Ser Cys  
 180 185 190  
 Val Phe Trp Asn Thr His Val Arg Glu Leu Thr Leu Ala Ser Ile Asp  
 195 200 205  
 Leu Gln Ser Gln Met Glu Pro Arg Thr His Pro Thr Trp Leu Leu His  
 210 215 220  
 Ile Phe Ile Pro Ser Cys Ile Ile Ala Phe Ile Phe Ile Ala Thr Val  
 225 230 235 240  
 Ile Ala Leu Arg Lys Gln Leu Cys Gln Lys Leu Tyr Ser Ser Lys Asp  
 245 250 255  
 Thr Thr Lys Arg Pro Val Thr Thr Thr Lys Arg Glu Val Asn Ser Ala  
 260 265 270

Ile

<210> 76  
 <211> 247  
 <212> PRT  
 <213> Mus musculus

<400> 76  
 Met Leu Leu Leu Leu Pro Ile Leu Asn Leu Ser Leu Gln Leu His Pro  
 1 5 10 15  
 Val Ala Ala Leu Phe Thr Val Thr Ala Pro Lys Glu Val Tyr Thr Val  
 20 25 30  
 Asp Val Gly Ser Ser Val Ser Leu Glu Cys Asp Phe Asp Arg Arg Glu  
 35 40 45



Cys Thr Glu Leu Glu Gly Ile Arg Ala Ser Leu Gln Lys Val Glu Asn  
 50 55 60  
 Asp Thr Ser Leu Gln Ser Glu Arg Ala Thr Leu Leu Glu Glu Gln Leu  
 65 70 75 80  
 Pro Leu Gly Lys Ala Leu Phe His Ile Pro Ser Val Gln Val Arg Asp  
 85 90 95  
 Ser Gly Gln Tyr Arg Cys Leu Val Ile Cys Gly Ala Ala Trp Asp Tyr  
 100 105 110  
 Lys Tyr Leu Thr Val Lys Val Lys Ala Ser Tyr Met Arg Ile Asp Thr  
 115 120 125  
 Arg Ile Leu Glu Val Pro Gly Thr Gly Glu Val Gln Leu Thr Cys Gln  
 130 135 140  
 Ala Arg Gly Tyr Pro Leu Ala Glu Val Ser Trp Gln Asn Val Ser Val  
 145 150 155 160  
 Pro Ala Asn Thr Ser His Ile Arg Thr Pro Glu Gly Leu Tyr Gln Val  
 165 170 175  
 Thr Ser Val Leu Arg Leu Lys Pro Gln Pro Ser Arg Asn Phe Ser Cys  
 180 185 190  
 Met Phe Trp Asn Ala His Met Lys Glu Leu Thr Ser Ala Ile Ile Asp  
 195 200 205  
 Pro Leu Ser Arg Met Glu Pro Lys Val Pro Arg Thr Trp Pro Leu His  
 210 215 220  
 Val Phe Ile Pro Ala Cys Thr Ile Ala Leu Ile Phe Leu Ala Ile Val  
 225 230 235 240  
 Ile Ile Gln Arg Lys Arg Ile  
 245

<210> 77  
 <211> 290  
 <212> PRT  
 <213> Homo sapiens

<400> 77  
 Met Arg Ile Phe Ala Val Phe Ile Phe Met Thr Tyr Trp His Leu Leu  
 1 5 10 15  
 Asn Ala Phe Thr Val Thr Val Pro Lys Asp Leu Tyr Val Val Glu Tyr  
 20 25 30  
 Gly Ser Asn Met Thr Ile Glu Cys Lys Phe Pro Val Glu Lys Gln Leu  
 35 40 45  
 Asp Leu Ala Ala Leu Ile Val Tyr Trp Glu Met Glu Asp Lys Asn Ile

50					55					60					
Ile	Gln	Phe	Val	His	Gly	Glu	Glu	Asp	Leu	Lys	Val	Gln	His	Ser	Ser
65					70					75					80
Tyr	Arg	Gln	Arg	Ala	Arg	Leu	Leu	Lys	Asp	Gln	Leu	Ser	Leu	Gly	Asn
				85					90					95	
Ala	Ala	Leu	Gln	Ile	Thr	Asp	Val	Lys	Leu	Gln	Asp	Ala	Gly	Val	Tyr
			100					105					110		
Arg	Cys	Met	Ile	Ser	Tyr	Gly	Gly	Ala	Asp	Tyr	Lys	Arg	Ile	Thr	Val
		115					120					125			
Lys	Val	Asn	Ala	Pro	Tyr	Asn	Lys	Ile	Asn	Gln	Arg	Ile	Leu	Val	Val
	130					135					140				
Asp	Pro	Val	Thr	Ser	Glu	His	Glu	Leu	Thr	Cys	Gln	Ala	Glu	Gly	Tyr
145					150					155					160
Pro	Lys	Ala	Glu	Val	Ile	Trp	Thr	Ser	Ser	Asp	His	Gln	Val	Leu	Ser
				165					170					175	
Gly	Lys	Thr	Thr	Thr	Thr	Asn	Ser	Lys	Arg	Glu	Glu	Lys	Leu	Phe	Asn
			180					185					190		
Val	Thr	Ser	Thr	Leu	Arg	Ile	Asn	Thr	Thr	Thr	Asn	Glu	Ile	Phe	Tyr
		195					200					205			
Cys	Thr	Phe	Arg	Arg	Leu	Asp	Pro	Glu	Glu	Asn	His	Thr	Ala	Glu	Leu
	210					215					220				
Val	Ile	Pro	Glu	Leu	Pro	Leu	Ala	His	Pro	Pro	Asn	Glu	Arg	Thr	His
225					230					235					240
Leu	Val	Ile	Leu	Gly	Ala	Ile	Leu	Leu	Cys	Leu	Gly	Val	Ala	Leu	Thr
				245					250					255	
Phe	Ile	Phe	Arg	Leu	Arg	Lys	Gly	Arg	Met	Met	Asp	Val	Lys	Lys	Cys
			260					265					270		
Gly	Ile	Gln	Asp	Thr	Asn	Ser	Lys	Lys	Gln	Ser	Asp	Thr	His	Leu	Glu
		275					280					285			
Glu	Thr														
	290														

<210> 78

<211> 290

<212> PRT

<213> Mus musculus

<400> 78

Met	Arg	Ile	Phe	Ala	Gly	Ile	Ile	Phe	Thr	Ala	Cys	Cys	His	Leu	Leu
1				5					10					15	

Arg Ala Phe Thr Ile Thr Ala Pro Lys Asp Leu Tyr Val Val Glu Tyr  
                     20                    25                    30  
 Gly Ser Asn Val Thr Met Glu Cys Arg Phe Pro Val Glu Arg Glu Leu  
                     35                    40                    45  
 Asp Leu Leu Ala Leu Val Val Tyr Trp Glu Lys Glu Asp Glu Gln Val  
                     50                    55                    60  
 Ile Gln Phe Val Ala Gly Glu Glu Asp Leu Lys Pro Gln His Ser Asn  
                     65                    70                    75                    80  
 Phe Arg Gly Arg Ala Ser Leu Pro Lys Asp Gln Leu Leu Lys Gly Asn  
                     85                    90                    95  
 Ala Ala Leu Gln Ile Thr Asp Val Lys Leu Gln Asp Ala Gly Val Tyr  
                     100                    105                    110  
 Cys Cys Ile Ile Ser Tyr Gly Gly Ala Asp Tyr Lys Arg Ile Thr Leu  
                     115                    120                    125  
 Lys Val Asn Ala Pro Tyr Arg Lys Ile Asn Gln Arg Ile Ser Val Asp  
                     130                    135                    140  
 Pro Ala Thr Ser Glu His Glu Leu Ile Cys Gln Ala Glu Gly Tyr Pro  
                     145                    150                    155                    160  
 Glu Ala Glu Val Ile Trp Thr Asn Ser Asp His Gln Pro Val Ser Gly  
                     165                    170                    175  
 Lys Arg Ser Val Thr Thr Ser Arg Thr Glu Gly Met Leu Leu Asn Val  
                     180                    185                    190  
 Thr Ser Ser Leu Arg Val Asn Ala Thr Ala Asn Asp Val Phe Tyr Cys  
                     195                    200                    205  
 Thr Phe Trp Arg Ser Gln Pro Gly Gln Asn His Thr Ala Glu Leu Ile  
                     210                    215                    220  
 Ile Pro Glu Leu Pro Ala Thr His Pro Pro Gln Asn Arg Thr His Trp  
                     225                    230                    235                    240  
 Val Leu Leu Gly Ser Ile Leu Leu Phe Leu Ile Val Val Ser Thr Val  
                     245                    250                    255  
 Leu Leu Phe Leu Arg Lys Gln Val Arg Met Leu Asp Val Glu Lys Cys  
                     260                    265                    270  
 Gly Val Glu Asp Thr Ser Ser Lys Asn Arg Asn Asp Thr Gln Phe Glu  
                     275                    280                    285  
 Glu Thr  
                     290

<210> 79

<211> 275

<212> PRT

<213> Mus musculus

<400> 79

Met	Ala	Arg	Ala	His	Pro	Gly	Asp	Ala	Thr	Leu	Pro	Ser	Ile	Leu	Val	
1				5					10					15		
Ser	Phe	Ile	Phe	Leu	Gln	Leu	Leu	Thr	Ser	Gly	Asn	Gly	Lys	Ser	Asp	
			20					25					30			
Phe	Leu	Val	Leu	Gly	Pro	Pro	His	Pro	Leu	Leu	Ala	Ile	Val	Gly	Gln	
		35					40					45				
Asp	Lys	Glu	Leu	Pro	Cys	Lys	Leu	Ser	Leu	Asn	Ile	Ser	Ala	Glu	Gly	
	50					55					60					
Met	Glu	Leu	Arg	Trp	Tyr	Arg	Asp	Lys	Pro	Ser	Ser	Val	Val	His	Val	
65					70					75					80	
Tyr	Lys	Asn	Gly	Glu	Asp	Val	Tyr	Asp	Glu	Gln	Met	Val	Glu	Tyr	Lys	
				85					90					95		
Gly	Arg	Thr	Ser	Phe	Asn	Gly	Ser	His	Val	Ala	Arg	Gly	Glu	Ala	Ala	
			100					105					110			
Val	Lys	Ile	His	Asn	Val	Thr	Val	Phe	Asp	Asn	Gly	Thr	Tyr	His	Cys	
		115					120					125				
Val	Phe	Lys	Glu	Tyr	Thr	Ser	His	Ser	Gln	Ala	Thr	Leu	Trp	Leu	Lys	
	130					135					140					
Val	Ala	Gly	Arg	Gly	Ser	Ser	Pro	Arg	Ile	Arg	Val	Thr	Asp	Thr	Gln	
145					150					155					160	
Asp	Lys	Gly	Ile	Arg	Ala	Glu	Cys	Thr	Ser	Ala	Gly	Trp	Tyr	Pro	Glu	
			165						170					175		
Pro	Lys	Val	Glu	Trp	Leu	Asp	Leu	Lys	Gly	Gln	Pro	Val	Ser	Ala	Glu	
		180					185						190			
Ser	His	Phe	Ser	Val	Ser	Ala	Ser	Thr	Gly	Leu	Val	Ala	Leu	Leu	Ser	
		195					200					205				
Ile	Val	Thr	Pro	Gln	Asp	Thr	Ala	Val	Gly	Gly	Leu	Thr	Cys	Ser	Ile	
	210					215					220					
Ser	Asn	Pro	Leu	Leu	Pro	Glu	Gln	Asp	Thr	Gly	Phe	Leu	Ala	Ala	Val	
225					230					235					240	
Val	Lys	Val	Ser	Val	Ser	Gly	Ala	His	Thr	Gly	Asn	Ile	Gly	Gln	Ser	
			245						250					255		
Val	Gln	Ser	His	Gly	Ser	Ile	Ile	Lys	Ser	Ser	Glu	Ser	Phe	Ser	Val	
			260					265					270			
Lys	Val	Pro														
		275														

<210> 80  
 <211> 334  
 <212> PRT  
 <213> Homo sapiens

<400> 80  
 Met Glu Ser Ala Ala Ala Leu His Phe Ser Arg Pro Ala Ser Leu Leu  
   1                  5                  10                  15  
 Leu Leu Leu Leu Ser Leu Cys Ala Leu Val Ser Ala Gln Phe Ile Val  
           20                  25                  30  
 Val Gly Pro Thr Asp Pro Ile Leu Ala Thr Val Gly Glu Asn Thr Thr  
           35                  40                  45  
 Leu Arg Cys His Leu Ser Pro Glu Lys Asn Ala Glu Asp Met Glu Val  
   50                  55                  60  
 Arg Trp Phe Arg Ser Gln Phe Ser Pro Ala Val Phe Val Tyr Lys Gly  
   65                  70                  75                  80  
 Gly Arg Glu Arg Thr Glu Glu Gln Met Glu Glu Tyr Arg Gly Arg Thr  
           85                  90                  95  
 Thr Phe Val Ser Lys Asp Ile Ser Arg Gly Ser Val Ala Leu Val Ile  
           100                  105                  110  
 His Asn Ile Thr Ala Gln Glu Asn Gly Thr Tyr Arg Cys Tyr Phe Gln  
           115                  120                  125  
 Glu Gly Arg Ser Tyr Asp Glu Ala Ile Leu His Leu Val Val Ala Gly  
   130                  135                  140  
 Leu Gly Ser Lys Pro Leu Ile Ser Met Arg Gly His Glu Asp Gly Gly  
  145                  150                  155                  160  
 Ile Arg Leu Glu Cys Ile Ser Arg Gly Trp Tyr Pro Lys Pro Leu Thr  
           165                  170                  175  
 Val Trp Arg Asp Pro Tyr Gly Gly Val Ala Pro Ala Leu Lys Glu Val  
           180                  185                  190  
 Ser Met Pro Asp Ala Asp Gly Leu Phe Met Val Thr Thr Ala Val Ile  
   195                  200                  205  
 Ile Arg Asp Lys Ser Val Arg Asn Met Ser Cys Ser Ile Asn Asn Thr  
   210                  215                  220  
 Leu Leu Gly Gln Lys Lys Glu Ser Val Ile Phe Ile Pro Glu Ser Phe  
  225                  230                  235                  240  
 Met Pro Ser Val Ser Pro Cys Ala Val Ala Leu Pro Ile Ile Val Val  
           245                  250                  255  
 Ile Leu Met Ile Pro Ile Ala Val Cys Ile Tyr Trp Ile Asn Lys Leu

260	265	270
Gln Lys Glu Lys Lys Ile Leu Ser Gly Glu Lys Glu Phe Glu Arg Glu		
275	280	285
Thr Arg Glu Ile Ala Leu Lys Glu Leu Glu Lys Glu Arg Val Gln Lys		
290	295	300
Glu Glu Glu Leu Gln Val Lys Glu Lys Leu Gln Glu Glu Leu Arg Trp		
305	310	315
320		
Arg Arg Thr Phe Leu His Ala Glu Leu Gln Phe Phe Ser Asn		
325	330	

<210> 81  
 <211> 527  
 <212> PRT  
 <213> Homo sapiens

<400> 81
Met Glu Ser Ala Ala Ala Leu His Phe Ser Arg Pro Ala Ser Leu Leu
1 5 10 15
Leu Leu Leu Leu Ser Leu Cys Ala Leu Val Ser Ala Gln Phe Ile Val
20 25 30
Val Gly Pro Thr Asp Pro Ile Leu Ala Thr Val Gly Glu Asn Thr Thr
35 40 45
Leu Arg Cys His Leu Ser Pro Glu Lys Asn Ala Glu Asp Met Glu Val
50 55 60
Arg Trp Phe Arg Ser Gln Phe Ser Pro Ala Val Phe Val Tyr Lys Gly
65 70 75 80
Gly Arg Glu Arg Thr Glu Glu Gln Met Glu Glu Tyr Arg Gly Arg Thr
85 90 95
Thr Phe Val Ser Lys Asp Ile Ser Arg Gly Ser Val Ala Leu Val Ile
100 105 110
His Asn Ile Thr Ala Gln Glu Asn Gly Thr Tyr Arg Cys Tyr Phe Gln
115 120 125
Glu Gly Arg Ser Tyr Asp Glu Ala Ile Leu His Leu Val Val Ala Gly
130 135 140
Leu Gly Ser Lys Pro Leu Ile Ser Met Arg Gly His Glu Asp Gly Gly
145 150 155 160
Ile Arg Leu Glu Cys Ile Ser Arg Gly Trp Tyr Pro Lys Pro Leu Thr
165 170 175
Val Trp Arg Asp Pro Tyr Gly Gly Val Ala Pro Ala Leu Lys Glu Val
180 185 190

Ser Met Pro Asp Ala Asp Gly Leu Phe Met Val Thr Thr Ala Val Ile  
 195 200 205  
 Ile Arg Asp Lys Ser Val Arg Asn Met Ser Cys Ser Ile Asn Asn Thr  
 210 215 220  
 Leu Leu Gly Gln Lys Lys Glu Ser Val Ile Phe Ile Pro Glu Ser Phe  
 225 230 235 240  
 Met Pro Ser Val Ser Pro Cys Ala Val Ala Leu Pro Ile Ile Val Val  
 245 250 255  
 Ile Leu Met Ile Pro Ile Ala Val Cys Ile Tyr Trp Ile Asn Lys Leu  
 260 265 270  
 Gln Lys Glu Lys Lys Ile Leu Ser Gly Glu Lys Glu Phe Glu Arg Glu  
 275 280 285  
 Thr Arg Glu Ile Ala Leu Lys Glu Leu Glu Lys Glu Arg Val Gln Lys  
 290 295 300  
 Glu Glu Glu Leu Gln Val Lys Glu Lys Leu Gln Glu Glu Leu Arg Trp  
 305 310 315 320  
 Arg Arg Thr Phe Leu His Ala Val Asp Val Val Leu Asp Pro Asp Thr  
 325 330 335  
 Ala His Pro Asp Leu Phe Leu Ser Glu Asp Arg Arg Ser Val Arg Arg  
 340 345 350  
 Cys Pro Phe Arg His Leu Gly Glu Ser Val Pro Asp Asn Pro Glu Arg  
 355 360 365  
 Phe Asp Ser Gln Pro Cys Val Leu Gly Arg Glu Ser Phe Ala Ser Gly  
 370 375 380  
 Lys His Tyr Trp Glu Val Glu Val Glu Asn Val Ile Glu Trp Thr Val  
 385 390 395 400  
 Gly Val Cys Arg Asp Ser Val Glu Arg Lys Gly Glu Val Leu Leu Ile  
 405 410 415  
 Pro Gln Asn Gly Phe Trp Thr Leu Glu Met His Lys Gly Gln Tyr Arg  
 420 425 430  
 Ala Val Ser Ser Pro Asp Arg Ile Leu Pro Leu Lys Glu Ser Leu Cys  
 435 440 445  
 Arg Val Gly Val Phe Leu Asp Tyr Glu Ala Gly Asp Val Ser Phe Tyr  
 450 455 460  
 Asn Met Arg Asp Arg Ser His Ile Tyr Thr Cys Pro Arg Ser Ala Phe  
 465 470 475 480  
 Ser Val Pro Val Arg Pro Phe Phe Arg Leu Gly Cys Glu Asp Ser Pro  
 485 490 495

Ile Phe Ile Cys Pro Ala Leu Thr Gly Ala Asn Gly Val Thr Val Pro  
500 505 510

Glu Glu Gly Leu Thr Leu His Arg Val Gly Thr His Gln Ser Leu  
515 520 525

<210> 82  
<211> 529  
<212> PRT  
<213> Homo sapiens

<400> 82  
Met Glu Ser Ala Ala Ala Leu His Phe Ser Arg Pro Ala Ser Leu Leu  
1 5 10 15

Leu Leu Leu Leu Ser Leu Cys Ala Leu Val Ser Ala Gln Phe Ile Val  
20 25 30

Val Gly Pro Thr Asp Pro Ile Leu Ala Thr Val Gly Glu Asn Thr Thr  
35 40 45

Leu Arg Cys His Leu Ser Pro Glu Lys Asn Ala Glu Asp Met Glu Val  
50 55 60

Arg Trp Phe Arg Ser Gln Phe Ser Pro Ala Val Phe Val Tyr Lys Gly  
65 70 75 80

Gly Arg Glu Arg Thr Glu Glu Gln Met Glu Glu Tyr Arg Gly Arg Thr  
85 90 95

Thr Phe Val Ser Lys Asp Ile Ser Arg Gly Ser Val Ala Leu Val Ile  
100 105 110

His Asn Ile Thr Ala Gln Glu Asn Gly Thr Tyr Arg Cys Tyr Phe Gln  
115 120 125

Glu Gly Arg Ser Tyr Asp Glu Ala Ile Leu His Leu Val Val Ala Ala  
130 135 140

Gly Leu Gly Ser Lys Pro Leu Ile Ser Met Arg Gly His Glu Asp Gly  
145 150 155 160

Gly Ile Arg Leu Glu Cys Ile Ser Arg Gly Trp Tyr Pro Lys Pro Leu  
165 170 175

Thr Val Trp Arg Asp Pro Tyr Gly Gly Val Ala Pro Ala Leu Lys Glu  
180 185 190

Val Ser Met Pro Asp Ala Asp Gly Leu Phe Met Val Thr Thr Ala Val  
195 200 205

Ile Ile Arg Asp Lys Ser Val Arg Asn Met Ser Cys Ser Ile Asn Asn  
210 215 220

Thr Leu Leu Gly Gln Lys Lys Glu Ser Val Ile Phe Ile Pro Glu Ser  
225 230 235 240



Phe Met Pro Ser Val Ser Pro Phe Ala Val Cys Ile Tyr Trp Ile Asn  
 245 250 255  
 Lys Leu Gln Lys Glu Lys Lys Ile Leu Ser Gly Glu Lys Glu Phe Glu  
 260 265 270  
 Arg Glu Thr Arg Glu Ile Ala Leu Lys Glu Leu Glu Lys Glu Arg Val  
 275 280 285  
 Gln Lys Glu Glu Glu Leu Gln Val Lys Glu Lys Leu Gln Glu Glu Leu  
 290 295 300  
 Arg Trp Arg Arg Thr Phe Leu His Ala Val Asp Val Val Leu Asp Pro  
 305 310 315 320  
 Asp Thr Ala His Pro Asp Leu Phe Leu Ser Glu Asp Arg Arg Ser Val  
 325 330 335  
 Arg Arg Cys Pro Phe Arg His Leu Gly Glu Ser Val Pro Asp Asn Pro  
 340 345 350  
 Glu Arg Phe Asp Ser Gln Pro Cys Val Leu Gly Arg Glu Ser Phe Ala  
 355 360 365  
 Ser Gly Lys His Tyr Trp Glu Val Glu Val Glu Asn Val Ile Glu Trp  
 370 375 380  
 Thr Val Gly Val Cys Arg Asp Ser Val Glu Arg Lys Gly Glu Val Leu  
 385 390 395 400  
 Leu Ile Pro Gln Asn Gly Phe Trp Thr Leu Glu Met His Lys Gly Gln  
 405 410 415  
 Tyr Arg Ala Val Ser Ser Pro Asp Arg Ile Leu Pro Leu Lys Glu Ser  
 420 425 430  
 Leu Cys Arg Val Gly Val Phe Leu Asp Tyr Glu Ala Gly Asp Val Ser  
 435 440 445  
 Phe Tyr Asn Met Arg Asp Arg Ser His Ile Tyr Thr Cys Pro Arg Ser  
 450 455 460  
 Ala Phe Ser Gly Pro Asp Thr Ser Gln Ser Gly Asp Pro Pro Glu Pro  
 465 470 475 480  
 Ile Glu Ser Ile Pro Trp Ser His Ser His Val Asp Lys Pro Trp Ser  
 485 490 495  
 Ser Gln Gln Pro Pro His Asn Thr His Leu Pro Ala Ala Ser Phe Thr  
 500 505 510  
 Pro Thr Thr Asp Leu Ser Pro Ser Phe Leu Leu Leu Thr Arg Leu Cys  
 515 520 525  
 Phe

<210> 83  
 <211> 336  
 <212> PRT  
 <213> Homo sapiens

<400> 83

Met	Glu	Pro	Ala	Ala	Ala	Leu	His	Phe	Ser	Leu	Pro	Ala	Ser	Leu	Leu
1				5					10					15	
Leu	Leu	Leu	Leu	Leu	Leu	Leu	Leu	Ser	Leu	Cys	Ala	Leu	Val	Ser	Ala
			20					25					30		
Gln	Phe	Thr	Val	Val	Gly	Pro	Ala	Asn	Pro	Ile	Leu	Ala	Met	Val	Gly
		35					40					45			
Glu	Asn	Thr	Thr	Leu	Arg	Cys	His	Leu	Ser	Pro	Glu	Lys	Asn	Ala	Glu
	50					55					60				
Asp	Met	Glu	Val	Arg	Trp	Phe	Arg	Ser	Gln	Phe	Ser	Pro	Ala	Val	Phe
	65				70					75					80
Val	Tyr	Lys	Gly	Gly	Arg	Glu	Arg	Thr	Glu	Glu	Gln	Met	Glu	Glu	Tyr
				85					90					95	
Arg	Gly	Arg	Ile	Thr	Phe	Val	Ser	Lys	Asp	Ile	Asn	Arg	Gly	Ser	Val
			100					105					110		
Ala	Leu	Val	Ile	His	Asn	Val	Thr	Ala	Gln	Glu	Asn	Gly	Ile	Tyr	Arg
		115					120					125			
Cys	Tyr	Phe	Gln	Glu	Gly	Arg	Ser	Tyr	Asp	Glu	Ala	Ile	Leu	Arg	Leu
	130					135					140				
Val	Val	Ala	Gly	Leu	Gly	Ser	Lys	Pro	Leu	Ile	Glu	Ile	Lys	Ala	Gln
145					150					155					160
Glu	Asp	Gly	Ser	Ile	Trp	Leu	Glu	Cys	Ile	Ser	Gly	Gly	Trp	Tyr	Pro
				165					170					175	
Glu	Pro	Leu	Thr	Val	Trp	Arg	Asp	Pro	Tyr	Gly	Glu	Val	Val	Pro	Ala
			180					185					190		
Leu	Lys	Glu	Val	Ser	Ile	Ala	Asp	Ala	Asp	Gly	Leu	Phe	Met	Val	Thr
		195					200					205			
Thr	Ala	Val	Ile	Ile	Arg	Asp	Lys	Tyr	Val	Arg	Asn	Val	Ser	Cys	Ser
	210					215					220				
Val	Asn	Asn	Thr	Leu	Leu	Gly	Gln	Glu	Lys	Glu	Thr	Val	Ile	Phe	Ile
225					230					235					240
Pro	Glu	Ser	Phe	Met	Pro	Ser	Ala	Ser	Pro	Trp	Met	Val	Ala	Leu	Ala
				245					250					255	
Val	Ile	Leu	Thr	Ala	Ser	Pro	Trp	Met	Val	Ser	Met	Thr	Val	Ile	Leu

260	265	270
Ala Val Phe Ile Ile Phe Met	Ala Val Ser Ile Cys Cys	Ile Lys Lys
275	280	285
Leu Gln Arg Glu Lys Lys Ile	Leu Ser Gly Glu Lys Lys	Val Glu Gln
290	295	300
Glu Glu Lys Glu Ile Ala Gln Gln	Leu Gln Glu Glu Leu Arg Trp	Arg
305	310	315
Arg Thr Phe Leu His Ala Asp Val	Asn Leu Thr Gly Leu Arg Asn	Thr
325	330	335

<210> 84  
 <211> 18  
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<220>  
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<400> 84  
 ccagccaggc gccatgct 18

<210> 85  
 <211> 19  
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<220>  
 <223> Description of Artificial Sequence: PCR primer

<400> 85  
 tctctggccc gggggctca 19

<210> 86  
 <211> 18  
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<220>  
 <223> Description of Artificial Sequence: PCR primer

<400> 86  
 actgcgggag ccctgagc 18

<210> 87  
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 <212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: PCR primer

<400> 87  
atcacctgct cccgtatcca tgcct 25

<210> 88  
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<220>

<223> Description of Artificial Sequence: PCR primer

<400> 88  
atgcgcccttc ccggggta 18

<210> 89  
<211> 20  
<212> DNA  
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<223> Description of Artificial Sequence: PCR primer

<400> 89  
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<210> 90  
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<220>

<223> Description of Artificial Sequence: PCR primer

<400> 90  
atgagtgata aacccaactt gtcag 25

<210> 91  
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<220>

<223> Description of Artificial Sequence: PCR primer

<400> 91  
gtgagccatc atgcccag 18

<210> 92  
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 <223> Description of Artificial Sequence: PCR primer  
  
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 ggatcccacc tgcagccgat ggaggggcag atgtatgag 39

<210> 93  
 <211> 40  
 <212> DNA  
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 <220>  
 <223> Description of Artificial Sequence: PCR primer  
  
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<210> 94  
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 <223> Description of Artificial Sequence: PCR primer  
  
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 tggagatctc aagtgttcat agaccatc 28

<210> 95  
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 <220>  
 <223> Description of Artificial Sequence: PCR primer  
  
 <400> 95  
 acaggcttca tccagtattt ggattc 26

<210> 96  
 <211> 23  
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 <223> Description of Artificial Sequence: PCR primer  
  
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aaatggccaa tacatgaaag gca	23
<210> 97	
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attgctttgt gggatgggga g	21
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<223> Description of Artificial Sequence: PCR primer	
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aatggcgaac actgcaccat c	21
<210> 99	
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<212> DNA	
<213> Artificial Sequence	
<220>	
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aagtgccagg aggaatcttc tgggagg	27
<210> 100	
<211> 22	
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gaagcctgtc tcatggctgg ag	22
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<400> 101  
atttccgcta cagagcacgg g 21

<210> 102  
<211> 21  
<212> DNA  
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<220>  
<223> Description of Artificial Sequence: PCR primer

<400> 102  
attcgctct cacgcagaca c 21

<210> 103  
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<212> DNA  
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<220>  
<223> Description of Artificial Sequence: PCR primer

<400> 103  
accacagtcg gcagcacaga t 21

<210> 104  
<211> 38  
<212> DNA  
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<220>  
<223> Description of Artificial Sequence: PCR primer

<400> 104  
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<210> 105  
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<212> DNA  
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<220>  
<223> Description of Artificial Sequence: PCR primer

<400> 105  
ctcgagcctt tcaggaggga gggggctgga gatgg 35

<210> 106  
<211> 21  
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<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: PCR primer

<400> 106

ccaccttcac gagtgaccac g

21

<210> 107

<211> 27

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: PCR primer

<400> 107

actgtgcagg tgcaggtggc aggtaag

27

<210> 108

<211> 23

<212> DNA

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<220>

<223> Description of Artificial Sequence: PCR primer

<400> 108

gaaggtgggc cttcctctgt act

23

<210> 109

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: PCR primer

<400> 109

cgccgaactt tacaccatcc t

21

<210> 110

<211> 20

<212> DNA

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<220>

<223> Description of Artificial Sequence: PCR primer

<400> 110

gtcagtcgac gtggatgagt

20



<210> 111  
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 <220>  
 <223> Description of Artificial Sequence: PCR primer  
  
 <400> 112  
 gtaggacttg ggcgtgttct 20  
  
  
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 <220>  
 <223> Description of Artificial Sequence: PCR primer  
  
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 gagctttgcc ctgttctgtt 20  
  
  
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 <220>  
 <223> Description of Artificial Sequence: PCR primer  
  
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acccttcctc atctgtgacc 20

<210> 116  
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<220>  
 <223> Description of Artificial Sequence: PCR primer

<400> 116  
 cattgagagc gataagttca ca 22

<210> 117  
 <211> 26  
 <212> DNA  
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<220>  
 <223> Description of Artificial Sequence: PCR primer

<400> 117  
 agaatgtgga gctcaacatc cacctg 26

<210> 118  
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<220>  
 <223> Description of Artificial Sequence: PCR primer

<400> 118  
 gatgcacgct gaagtcattc 20

<210> 119  
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<220>  
 <223> Description of Artificial Sequence: PCR primer

<400> 119  
 tgaccacaga catcatcagt gt 22

<210> 120  
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<220>

<223> Description of Artificial Sequence: PCR primer

<400> 120

ccatcttgaa ccatgcccac taccta

26

<210> 121

<211> 20

<212> DNA

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<220>

<223> Description of Artificial Sequence: PCR primer

<400> 121

tcaatggtga agtgcaggtt

20

<210> 122

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: PCR primer

<400> 122

tgaccacaga catcatcagt gt

22

<210> 123

<211> 26

<212> DNA

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<220>

<223> Description of Artificial Sequence: PCR primer

<400> 123

ccatcttgaa ccatgcccac taccta

26

<210> 124

<211> 20

<212> DNA

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<220>

<223> Description of Artificial Sequence: PCR primer

<400> 124

tcaatggtga agtgcaggtt

20

<210> 125

<211> 20

<212> DNA

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<220>

<223> Description of Artificial Sequence: PCR primer

<400> 125  
gccgacttca agaaggatgt 20

<210> 126  
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<220>

<223> Description of Artificial Sequence: PCR primer

<400> 126  
aaggtcttcc gggccctgat cct 23

<210> 127  
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<220>

<223> Description of Artificial Sequence: PCR primer

<400> 127  
gaactgactc tgccccttct 20

<210> 128  
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<220>

<223> Description of Artificial Sequence: PCR primer

<400> 128  
accaccttc tatggcatgt a 21

<210> 129  
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<223> Description of Artificial Sequence: PCR primer

<400> 129  
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<210> 130  
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 gggctgtttc attgatgtta aa 22

<210> 131  
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 <400> 131  
 agccccagaa gccatcg 17

<210> 132  
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 <400> 132  
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<210> 133  
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 <220>  
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 ctcccacatg acaatgccat ag 22

<210> 134  
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tcccgggaat taaaacttac at	22
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aaacctatct aggcccatga atggaa	26
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<400> 139  
aggatcggat ttggatttgt t 21

<210> 140  
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<220>  
<223> Description of Artificial Sequence: PCR primer

<400> 140  
ggcagaagga gagaaatcac a 21

<210> 141  
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<220>  
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<400> 141  
actgacattg tcagcttcct tgacaa 26

<210> 142  
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<212> DNA  
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<220>  
<223> Description of Artificial Sequence: PCR primer

<400> 142  
cactgggatt tcggatcagt 20

<210> 143  
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<220>  
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<400> 143  
accaccttc tatggcatgt a 21

<210> 144  
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<220>

<223> Description of Artificial Sequence: PCR primer

<400> 144  
aggccacctt cagctcctag gaatgt 26

<210> 145  
<211> 22  
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<223> Description of Artificial Sequence: PCR primer

<400> 145  
gggctgtttc attgatgtta aa 22

<210> 146  
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<220>

<223> Description of Artificial Sequence: PCR primer

<400> 146  
aagagtaggt cagctgctca tg 22

<210> 147  
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<223> Description of Artificial Sequence: PCR primer

<400> 147  
tcttctaccc gcaggtagt ccaaaa 26

<210> 148  
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<400> 148  
agaaagtcta cccacggata gc 22



<210> 149  
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 agccccagaa gccatcg 17

<210> 150  
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 <400> 150  
 ttctcctcag caagcgatgc atgga 25

<210> 151  
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 <400> 151  
 ctcccatg acaatgcat ag 22

<210> 152  
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 tcccgggaat·taaaacttac at 22

<210> 153  
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 <400> 153

cccatcccta gcagtccatg aatttg 26

<210> 154  
 <211> 22  
 <212> DNA  
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<220>  
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<400> 154  
 tcttgaggga tcaatctcct tt 22

<210> 155  
 <211> 21  
 <212> DNA  
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<220>  
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<400> 155  
 gcagattatt gctacgcaat g 21

<210> 156  
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<220>  
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<400> 156  
 aaacctatct aggcccatga atggaa 26

<210> 157  
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<220>  
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<400> 157  
 aggatcggat ttggatttgt t 21

<210> 158  
 <211> 21  
 <212> DNA  
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<220>

<223> Description of Artificial Sequence: PCR primer

<400> 158  
ggcagaagga gagaaatcac a 21

<210> 159  
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<212> DNA  
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<400> 159  
actgacattg tcagcttcct tgacaa 26

<210> 160  
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<400> 160  
cactgggatt tcggatcagt 20

<210> 161  
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<400> 161  
atgcttgcag agaaggattc tt 22

<210> 162  
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<400> 162  
atacagtttc aagctgcaca ggcctg 26

<210> 163  
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<400> 163  
tctcttggca atgtaatttt gg 22

<210> 164  
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<223> Description of Artificial Sequence: PCR primer

<400> 164  
ccctacaaat ccatagttgc aa 22

<210> 165  
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<220>

<223> Description of Artificial Sequence: PCR primer

<400> 165  
ttcttccctt ctctttgctg gcatgt 26

<210> 166  
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<223> Description of Artificial Sequence: PCR primer

<400> 166  
gtttagacgt ctgtgccact tg 22

<210> 167  
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<212> DNA  
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: PCR primer

<400> 167  
ccctacaaat ccatagttgc aa 22

<210> 168  
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 ttcttccctt ctctttgctg gcatgt 26  
  
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 <400> 169  
 gtttagacgt ctgtgccact tg 22  
  
 <210> 170  
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 <220>  
 <223> Description of Artificial Sequence: PCR primer  
  
 <400> 170  
 acaccgtgaa agagccactt 20  
  
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 cctagggaag gcctcgttcc aca 23  
  
 <210> 172  
 <211> 21  
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 <220>  
 <223> Description of Artificial Sequence: PCR primer  
  
 <400> 172

ccctcacttg gacttgaggt a 21

<210> 173  
 <211> 21  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: PCR primer

<400> 173  
 atgcagtcac tccctcactg t 21

<210> 174  
 <211> 26  
 <212> DNA  
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 <223> Description of Artificial Sequence: PCR primer

<400> 174  
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<210> 175  
 <211> 22  
 <212> DNA  
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<220>  
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<400> 175  
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<210> 176  
 <211> 21  
 <212> DNA  
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<400> 176  
 atgggaaagc tgactttgat g 21

<210> 177  
 <211> 26  
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<220>

<223> Description of Artificial Sequence: PCR primer

<400> 177

ctcatgcccc tattctggct atggct

26

<210> 178

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: PCR primer

<400> 178

ggaacagctg gcactgtaac t

21

<210> 179

<211> 25

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: PCR primer

<400> 179

cgacggttta gacgtctgtg ccact

25

<210> 180

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: PCR primer

<400> 180

agcagtgcac cctccccact cagt

24

<210> 181

<211> 113

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: consensus  
sequence

<400> 181

Cys Gly Gly Thr Leu Thr Ala Ser Ser Gly Thr Ile Thr Ser Pro Asn  
1 5 10 15

Tyr Pro Asn Ser Tyr Pro Asn Asn Leu Asn Cys Val Trp Thr Ile Ser  
20 25 30

Ala Pro Pro Gly Tyr Arg Ile Glu Leu Lys Phe Thr Asp Phe Asp Leu  
35 40 45

Glu Ser Ser Asp Asn Cys Thr Tyr Asp Tyr Val Glu Ile Tyr Asp Gly  
50 55 60

Pro Ser Thr Ser Ser Pro Leu Leu Gly Arg Phe Cys Gly Ser Glu Leu  
65 70 75 80

Pro Pro Pro Ile Ile Ser Ser Ser Ser Asn Ser Met Thr Val Thr Phe  
85 90 95

Val Ser Asp Ser Ser Val Gln Lys Arg Gly Phe Ser Ala Arg Tyr Ser  
100 105 110

Ala

<210> 182  
<211> 111  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: consensus  
sequence

<400> 182  
Gln Pro Val Arg Phe Asp Lys Val Leu Tyr Asn Gln Gln Gly His Tyr  
1 5 10 15

Asp Pro Ser Thr Gly Lys Phe Thr Cys Pro Val Pro Gly Val Tyr Tyr  
20 25 30

Phe Ser Tyr His Ile Glu Ser Lys Gly Arg Asn Val Lys Val Ser Leu  
35 40 45

Met Lys Asn Gly Ile Gln Val Met Arg Glu Cys Asp Glu Tyr Gln Lys  
50 55 60

Gly Leu Tyr Gln Val Ala Ser Gly Gly Ala Leu Leu Gln Leu Arg Gln  
65 70 75 80

Gly Asp Gln Val Trp Leu Glu Leu Asp Asp Lys Lys Asn Gly Leu Tyr  
85 90 95

Ala Gly Glu Glu Val Asp Ser Thr Phe Ser Gly Phe Leu Leu Phe  
100 105 110

<210> 183  
<211> 256  
<212> PRT  
<213> Artificial Sequence



<220>

<223> Description of Artificial Sequence: consensus  
sequence

<400> 183

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Tyr Glu Leu Leu Glu Val Leu Gly Lys Gly Ala Phe Gly Lys Val Tyr
 1              5              10              15

Leu Ala Arg Asp Lys Lys Thr Gly Lys Leu Val Ala Ile Lys Val Ile
      20              25              30

Lys Lys Glu Lys Leu Lys Lys Lys Lys Arg Glu Arg Ile Leu Arg Glu
      35              40              45

Ile Lys Ile Leu Lys Lys Leu Asp His Pro Asn Ile Val Lys Leu Tyr
      50              55              60

Asp Val Phe Glu Asp Asp Asp Lys Leu Tyr Leu Val Met Glu Tyr Cys
      65              70              75              80

Glu Gly Gly Asp Leu Phe Asp Leu Leu Lys Lys Arg Gly Arg Leu Ser
      85              90              95

Glu Asp Glu Ala Arg Phe Tyr Ala Arg Gln Ile Leu Ser Ala Leu Glu
      100             105             110

Tyr Leu His Ser Gln Gly Ile Ile His Arg Asp Leu Lys Pro Glu Asn
      115             120             125

Ile Leu Leu Asp Ser Asp Gly His Val Lys Leu Ala Asp Phe Gly Leu
      130             135             140

Ala Lys Gln Leu Asp Ser Gly Gly Thr Leu Leu Thr Thr Phe Val Gly
      145             150             155             160

Thr Pro Glu Tyr Met Ala Pro Glu Val Leu Leu Gly Lys Gly Tyr Gly
      165             170             175

Lys Ala Val Asp Ile Trp Ser Leu Gly Val Ile Leu Tyr Glu Leu Leu
      180             185             190

Thr Gly Lys Pro Pro Phe Pro Gly Asp Asp Gln Leu Leu Ala Leu Phe
      195             200             205

Lys Lys Ile Gly Lys Pro Pro Pro Pro Phe Pro Pro Pro Glu Trp Lys
      210             215             220

Ile Ser Pro Glu Ala Lys Asp Leu Ile Lys Lys Leu Leu Val Lys Asp
      225             230             235             240

Pro Glu Lys Arg Leu Thr Ala Glu Glu Ala Leu Glu His Pro Phe Phe
      245             250             255
```

<210> 184  
 <211> 126  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: consensus  
 sequence

<400> 184  
 Cys Gly Phe Pro Thr Cys Ser Thr Leu Gly Thr Cys Gly Ser Ser Cys  
 1 5 10 15  
 Cys Gln Pro Pro Ser Cys Cys Gln Pro Ser Cys Cys Gln Pro Val Cys  
 20 25 30  
 Ser Gln Thr Thr Cys Cys Arg Pro Thr Cys Phe Gln Ser Ser Cys Cys  
 35 40 45  
 Arg Pro Ser Cys Cys Gln Thr Ser Cys Cys Gln Pro Thr Cys Cys Gln  
 50 55 60  
 Ser Ser Ser Cys Gln Thr Gly Cys Gly Ile Gly Ser Cys Arg Thr Arg  
 65 70 75 80  
 Trp Cys Arg Pro Asp Cys Arg Val Glu Gly Thr Cys Leu Pro Pro Cys  
 85 90 95  
 Cys Val Val Ser Cys Thr Pro Pro Thr Cys Cys Gln Pro Val Ser Ala  
 100 105 110  
 Gln Ala Ser Cys Cys Arg Pro Ser Tyr Cys Gly Gln Ser Cys  
 115 120 125

<210> 185  
 <211> 174  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: consensus  
 sequence

<400> 185  
 Glu Val Thr Leu Leu Asp Thr Thr Thr Ala Thr Gly Glu Leu Gly Trp  
 1 5 10 15  
 Leu Thr Tyr Pro Pro Gly Gly Trp Glu Glu Val Ser Gly Leu Asp Glu  
 20 25 30  
 Asn Asn Arg Pro Ile Arg Thr Tyr Gln Val Cys Asn Val Met Glu Pro  
 35 40 45  
 Asn Gln Asn Asn Trp Leu Arg Thr Asn Trp Ile Pro Arg Arg Gly Ala  
 50 55 60

Gln Arg Val Tyr Val Glu Leu Lys Phe Thr Val Arg Asp Cys Asn Ser  
 65 70 75 80  
 Leu Pro Gly Val Leu Gly Thr Cys Lys Glu Thr Phe Asn Leu Tyr Tyr  
 85 90 95  
 Tyr Glu Ser Asp Glu Asp Val Gly Pro Ala Trp Arg Glu Asn Gln Tyr  
 100 105 110  
 Thr Lys Val Asp Thr Ile Ala Ala Asp Glu Ser Phe Thr Gln Val Asp  
 115 120 125  
 Leu Gly Asp Arg Val Met Lys Leu Asn Thr Glu Val Arg Ser Val Gly  
 130 135 140  
 Pro Leu Ser Lys Lys Gly Phe Tyr Leu Ala Phe Gln Asp Val Gly Ala  
 145 150 155 160  
 Cys Met Ala Leu Val Ser Val Arg Val Phe Tyr Lys Lys Cys  
 165 170

<210> 186

<211> 432

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: consensus  
sequence

<400> 186

Thr Gly Val Ile Gly Gly Phe Ala Thr Leu Ile Asp Phe Leu Phe Phe  
 1 5 10 15

Phe Gly Gly Leu Thr Ser Ser Gly Ser Cys Ala Glu Ser Thr Val Leu  
 20 25 30

Ser Gly Leu Val Val Ser Ile Phe Phe Val Gly Arg Pro Ile Gly Ser  
 35 40 45

Leu Phe Ala Gly Lys Leu Gly Asp Arg Phe Gly Arg Lys Lys Ser Leu  
 50 55 60

Leu Ile Gly Leu Val Leu Phe Val Ile Gly Ser Leu Leu Ser Gly Leu  
 65 70 75 80

Ala Pro Gly Ala Phe Tyr Leu Leu Ile Val Gly Arg Val Leu Val Gly  
 85 90 95

Leu Gly Val Gly Gly Ala Ser Val Leu Val Pro Met Tyr Ile Ser Glu  
 100 105 110

Ile Ala Pro Lys Ala Leu Arg Gly Ala Leu Gly Ser Leu Tyr Gln Leu  
 115 120 125

Gly Ile Thr Ile Gly Ile Leu Val Ala Ala Ile Ile Gly Leu Gly Leu

130	135	140													
Asn Lys Thr Asn Asn Trp Gly Trp Arg Ile Pro Leu Gly Leu Gln Leu															
145		150						155							160
Val Pro Ala Leu Leu Leu Leu Ile Gly Leu Leu Phe Leu Pro Glu Ser								170							175
		165													
Pro Arg Trp Leu Val Leu Lys Gly Lys Leu Glu Glu Ala Arg Ala Val								185							190
		180													
Leu Ala Lys Leu Arg Gly Val Glu Asp Val Asp Gln Glu Ile Gln Glu															
		195						200					205		
Glu Lys Ala Glu Leu Glu Ala Gly Val Ser Ser Glu Lys Ala Gly Leu															
		210					215					220			
Glu Leu Phe Arg Gly Arg Thr Arg Gln Arg Leu Leu Met Gly Val Met															
225					230					235					240
Leu Gln Ile Phe Gln Gln Leu Thr Gly Ile Asn Ala Ile Phe Tyr Tyr															
		245						250						255	
Ser Pro Thr Ile Phe Lys Ser Val Gly Met Ser Asp Ser Val Ala Leu															
		260						265					270		
Leu Val Thr Ile Ile Val Gly Val Val Asn Phe Val Ala Thr Phe Val															
		275					280						285		
Ala Ile Phe Leu Val Asp Arg Phe Gly Arg Arg Pro Leu Leu Leu Leu															
		290				295					300				
Gly Ala Ala Gly Met Ala Ile Cys Phe Leu Ile Leu Gly Val Ala Leu															
305					310					315					320
Leu Leu Leu Asn Lys Pro Gly Ala Gly Ile Val Ala Ile Val Phe Ile															
		325						330						335	
Leu Leu Phe Ile Ala Phe Phe Ala Leu Gly Trp Gly Pro Ile Pro Trp															
		340						345					350		
Val Ile Leu Ser Glu Leu Phe Pro Thr Gly Val Arg Ser Lys Ala Met															
		355					360					365			
Ala Leu Ala Thr Ala Ala Asn Trp Leu Ala Asn Phe Ile Ile Gly Phe															
		370				375						380			
Leu Phe Pro Tyr Ile Thr Gly Ala Ile Gly Gly Gly Tyr Val Phe Leu															
385					390				395						400
Phe Phe Ala Gly Leu Leu Val Leu Phe Ile Leu Phe Val Tyr Phe Phe															
		405						410						415	
Val Pro Glu Thr Lys Gly Arg Thr Leu Glu Glu Ile Asp Glu Leu Phe															
		420						425						430	

<210> 187  
 <211> 33  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence:consensus  
 sequence

<400> 187  
 Asp Ile Asp Glu Cys Ala Ser Gly Asn Pro Cys Gln Asn Gly Gly Thr  
 1 5 10 15  
 Cys Val Asn Thr Val Gly Ser Tyr Arg Cys Glu Glu Cys Pro Pro Gly  
 20 25 30

Tyr

<210> 188  
 <211> 33  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: consensus  
 sequence

<400> 188  
 Asp Ile Asp Glu Cys Ala Ser Gly Asn Pro Cys Gln Asn Gly Gly Thr  
 1 5 10 15  
 Cys Val Asn Thr Val Gly Ser Tyr Arg Cys Glu Glu Cys Pro Pro Gly  
 20 25 30

Tyr

<210> 189  
 <211> 77  
 <212> PRT  
 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: consensus  
 sequence

<400> 189  
 Glu Ser Val Thr Leu Ser Cys Glu Ala Ser Gly Asn Pro Pro Pro Thr  
 1 5 10 15  
 Val Thr Trp Tyr Lys Gln Gly Gly Lys Leu Leu Ala Glu Ser Gly Arg

	20		25		30										
Phe	Ser	Val	Ser	Arg	Ser	Gly	Gly	Asn	Ser	Thr	Leu	Thr	Ile	Ser	Asn
		35					40					45			
Val	Thr	Pro	Glu	Asp	Ser	Gly	Thr	Tyr	Thr	Cys	Ala	Ala	Thr	Asn	Ser
	50					55					60				
Ser	Gly	Ser	Ala	Ser	Ser	Gly	Thr	Thr	Leu	Thr	Val	Leu			
65					70					75					

<210> 190

<211> 77

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: consensus  
sequence

<400> 190

Val	Thr	Leu	Ser	Cys	Lys	Ala	Ser	Gly	Phe	Thr	Phe	Ser	Ser	Tyr	Tyr
1				5					10					15	

Val	Ser	Trp	Val	Arg	Gln	Pro	Pro	Gly	Lys	Gly	Leu	Glu	Trp	Leu	Gly
			20					25					30		

Tyr	Ile	Gly	Ser	Asp	Val	Ser	Tyr	Ser	Glu	Ala	Ser	Tyr	Lys	Gly	Arg
		35					40					45			

Val	Thr	Ile	Ser	Lys	Asp	Asn	Ser	Lys	Asn	Asp	Val	Ser	Leu	Thr	Ile
	50					55					60				

Ser	Asn	Leu	Arg	Val	Glu	Asp	Thr	Gly	Thr	Tyr	Tyr	Cys			
65					70					75					